

UK METEOROLOGICAL OFFICE GLOBAL DATA MONITORING REPORT

JANUARY, 95

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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Bracknell. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Bracknell in time for inclusion into the appropriate analysis. The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background field). Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

Comments or queries on the report are welcome and should be addressed to:-

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2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1-2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIBU observations received per day throughout the month at Bracknell and assimilated into model runs. Only data from the main hours of 00 UTC, 06 UTC, 12 UTC and 18 UTC are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At RSMC Bracknell, for synoptic stations at or below a height of 500 metres, reported mean sea-level pressure is used in the statistics. If this is unavailable the mean sea-level pressure is calculated from the reported station-level pressure and temperature.

For synoptic stations above 500 metres, the mean sea-level pressure is calculated from the reported station-level pressure and temperature, or, if these are not available the height of a standard pressure-level (e.g.: 850 hPa or 700 hPa). If neither of these are available, the reported mean sea-level pressure is used.

Some stations vary their reporting practice according to the observation hour (e.g.: some stations in the CIS report both mean sea-level and station-level pressure at 00 & 12 UTC, but only mean sea-level pressure at 06 & 18 UTC). For monitoring purposes, reported mean sea-level pressure is stored separately from that calculated from station-level pressure or height of a standard pressure-level. Only statistics for the preferred method (see above) are presented in this report, and so for certain high-level stations, such as those from the CIS, approximately half of the number of observations actually received will appear in the statistics.

Aircraft observations

TABLE 4 contains a list of statistics calculated from data received from all airline carriers.

Figure 3 shows 10 degree lat/long box average numbers of AIREP/ASDAR reports received per day throughout the month at Bracknell and assimilated into model runs in the layer 70-500 hPa. Observations with a vector wind difference (compared with the model background field) of $>60 \text{ ms}^{-1}$ have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5 , then 0 is plotted.

Figures 4-7 show wind statistics for AIREP/ASDAR in the layer 70-500 hPa. Observations with a vector wind difference $> 60 \text{ m s}^{-1}$ have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed (m s^{-1})
7	RMS observation-background vector (m s^{-1})

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Bracknell and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5 , then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-27 show satellite mean observation-background temperature differences for NOAA-11 soundings at 500 km resolution and figures 28-30 show the same statistics for NOAA-12. Data are plotted where there are > 30 observations in a 10 degree lat/long box.

Figure	Layer (hPa)
25/28	850-1000
26/29	100-300
27/30	30-50

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Bracknell during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Bracknell in DRIFTER code during the month for the area 10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Bracknell from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics (**Geopotential Height and Windspeed at 100 and 500 hPa**) for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: BRACKNELL
MONTH: January, 95

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for ships, fixed buoys and platforms.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:00, 06, 12, 18 UTC
Elements monitored	:Mean sea level pressure (hPa). :Wind speed (m s^{-1}). :Wind direction (Degrees).

Parameters monitored

:NOBS	:Number of observations received excluding duplicates.
:NGE	:Number of observations with gross errors.
:PGE	:Percentage of observations with gross errors.
:SD	:SD of difference of observations from background values excluding those with gross errors.
:BIAS	:Mean difference of observations from background values excluding those with gross errors. N.B. a positive bias indicates the observation is veered to the background.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT	:15 hPa (pressure)
	:25 m s^{-1} (vector wind)

SELECTION CRITERIA	:NOBS	≥ 20 , and one or more of the following:
	1. bias	≥ 4 hPa (pressure), ≥ 5 m s^{-1} (wind speed), ≥ 30 degrees (direction).
	2. SD	≥ 6 hPa (pressure), ≥ 80 degrees (direction).
	3. PGE	≥ 25

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE									
BONH	ALL	MSLP	SUR	27	0	0	1.4	5.6	5.7
C6HQ5	ALL	MSLP	SUR	21	1	5	4.0	5.7	6.9
C6KB6	ALL	MSLP	SUR	81	0	0	1.1	-5.7	5.8
C6KP9	ALL	MSLP	SUR	21	0	0	6.4	-2.2	6.7
DEFL	ALL	MSLP	SUR	31	1	3	1.3	-8.9	9.0
DIOR	ALL	MSLP	SUR	42	0	0	1.4	4.3	4.6
D5NE	ALL	MSLP	SUR	32	0	0	1.3	6.2	6.3
ELEW9	ALL	MSLP	SUR	21	0	0	1.6	-5.1	5.4
ESCA	ALL	MSLP	SUR	28	0	0	1.0	12.9	13.0
KXDB	ALL	MSLP	SUR	25	0	0	1.2	-9.7	9.7
OYMO2	ALL	MSLP	SUR	31	1	3	1.5	-11.3	11.4
SIJD	ALL	MSLP	SUR	23	0	0	1.3	6.3	6.4
UETN	ALL	MSLP	SUR	26	1	4	3.8	-4.3	5.7
UNWJ	ALL	MSLP	SUR	24	0	0	1.6	4.4	4.7
UROU	ALL	MSLP	SUR	25	11	44	6.0	-1.1	6.1
VRUA4	ALL	MSLP	SUR	58	0	0	1.1	5.2	5.4
ZBWP	ALL	MSLP	SUR	36	0	0	1.4	4.7	4.9
3EAY5	ALL	MSLP	SUR	23	0	0	2.0	-4.2	4.7
3EJH6	ALL	MSLP	SUR	24	0	0	1.8	5.4	5.7
3EWK9	ALL	MSLP	SUR	29	0	0	0.9	4.5	4.6
63102	ALL	MSLP	SUR	34	0	0	2.8	4.1	5.0
WIND SPEED									
CG2614	ALL	SPEED	SUR	86	0	0	3.0	-5.0	5.8
C6DY8	ALL	SPEED	SUR	28	0	0	5.0	7.7	9.2
C6JD4	ALL	SPEED	SUR	36	4	11	5.0	12.7	13.6
C6KI6	ALL	SPEED	SUR	44	10	23	6.4	14.8	16.1
ELHR9	ALL	SPEED	SUR	32	0	0	4.5	5.4	7.0
FNIH	ALL	SPEED	SUR	43	0	0	4.7	8.6	9.8
GBXW	ALL	SPEED	SUR	56	0	0	4.8	7.3	8.7
GZOQ	ALL	SPEED	SUR	29	0	0	2.6	5.1	5.8
LAVX4	ALL	SPEED	SUR	27	0	0	3.4	6.9	7.7
OUEW	ALL	SPEED	SUR	20	0	0	5.1	5.8	7.7
P3XM4	ALL	SPEED	SUR	50	0	0	3.5	5.2	6.3
SIJD	ALL	SPEED	SUR	23	0	0	4.5	7.1	8.4
UKHD	ALL	SPEED	SUR	22	0	0	6.1	5.6	8.3
UROU	ALL	SPEED	SUR	24	5	21	4.7	5.1	7.0
VJDK	ALL	SPEED	SUR	37	0	0	6.0	8.7	10.5
3EAJ2	ALL	SPEED	SUR	22	0	0	4.0	8.0	9.0
WIND DIRECTION									
C6LP5	ALL	DIRN.	SUR	40	0	0	47.1	-39.9	61.8
EUOC	ALL	DIRN.	SUR	21	1	5	80.2	4.1	80.3
GTAB	ALL	DIRN.	SUR	25	0	0	39.0	31.2	49.9
32303	ALL	DIRN.	SUR	25	0	0	101.2	-2.6	101.2
32315	ALL	DIRN.	SUR	35	0	0	37.1	-34.1	50.4
46006	ALL	DIRN.	SUR	111	0	0	33.4	-41.6	53.3
46045	ALL	DIRN.	SUR	41	0	0	42.2	-31.9	52.9
46053	ALL	DIRN.	SUR	73	0	0	48.1	-33.4	58.5
46181	ALL	DIRN.	SUR	101	0	0	34.5	-46.5	58.0
52011	ALL	DIRN.	SUR	28	0	0	34.5	-32.5	47.4
62126	ALL	DIRN.	SUR	105	1	1	45.7	36.9	58.7

FIGURE 1

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 18647

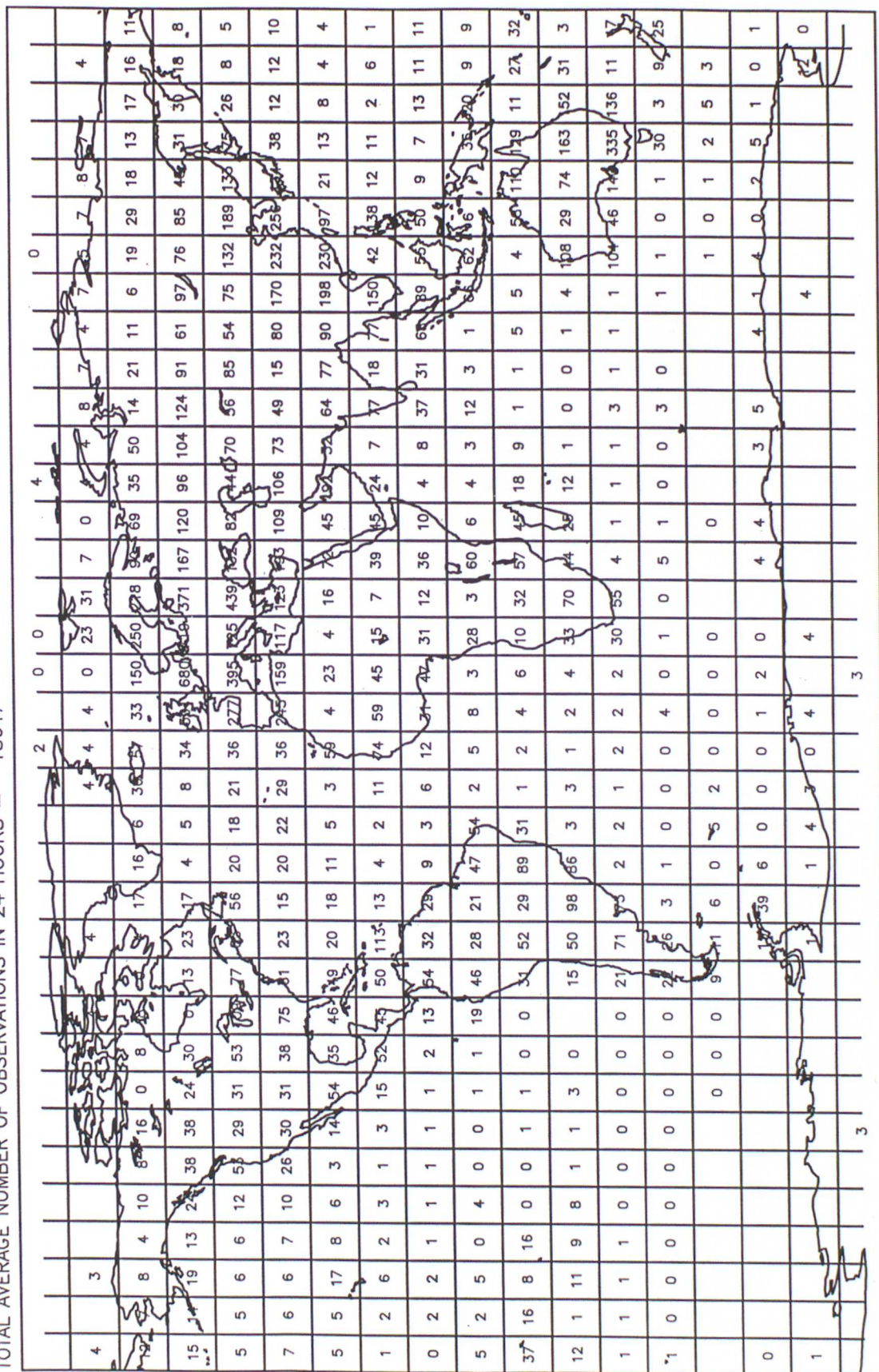


TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: BRACKNELL
MONTH: January, 95

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for drifting buoys.
Standard of comparison	:Background field from Bracknell global model.
Position	:Average latitude and longitude for period.
Observation times	:00, 06, 12, 18 UTC
Elements monitored	:Mean sea level pressure (hPa). :Wind speed (m s^{-1}). :Wind direction (degrees).

Parameters monitored

:NOBS	:Number of observations received excluding duplicates.
:NGE	:Number of observations with gross errors.
:PGE	:Percentage of observations with gross errors.
:SD	:SD of difference of observations from background values excluding those with gross errors.
:BIAS	:Mean difference of observations from background values excluding those with gross errors. N.B. a positive bias indicates the observation is veered to the background.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT

:15 hPa	(pressure)
:25 m s^{-1}	(vector wind)

SELECTION CRITERIA

:NOBS	≥ 20	, and one or more of the following:
1. bias	≥ 4 hPa	(pressure),
	≥ 5 m s^{-1}	(wind speed),
	≥ 30 degrees	(direction).
2. SD	≥ 6 hPa	(pressure),
	≥ 80 degrees	(direction).
3. PGE	≥ 25 .	

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
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MEAN SEA LEVEL PRESSURE

44769	62.1	-8.7	ALL	MSLP	SUR	57	53	93	1.4	12.2	12.3
63663	76.0	-96.3	ALL	MSLP	SUR	257	110	43	6.5	0.0	6.5

WIND SPEED

46527	44.0	168.7	ALL	SPEED	SUR	57	0	0	3.6	-7.1	8.0
46551	44.6	-163.4	ALL	SPEED	SUR	63	0	0	2.9	-7.0	7.6
52540	27.3	149.0	ALL	SPEED	SUR	151	0	0	2.5	-6.0	6.5
52655	10.5	138.8	ALL	SPEED	SUR	76	0	0	1.3	-5.1	5.3
52656	7.3	151.6	ALL	SPEED	SUR	156	0	0	1.7	-5.6	5.8
64544	57.1	-41.4	ALL	SPEED	SUR	244	1	0	3.7	-6.2	7.2

WIND DIRECTION

46509	39.9	-138.9	ALL	DIRN.	SUR	151	0	0	103.1	61.2	119.9
46657	47.2	-154.9	ALL	DIRN.	SUR	174	0	0	39.1	-38.5	54.9
51502	21.3	-141.9	ALL	DIRN.	SUR	91	0	0	62.3	-69.8	93.6
64544	57.1	-41.4	ALL	DIRN.	SUR	203	1	0	81.8	-21.1	84.5

AVAILABILITY - DRIBU - JANUARY 1995

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

[illegible]

TABLE 3

MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: BRACKNELL
MONTH: January, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for synops & autosynops.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00, 06, 12, 18 UTC
Elements monitored		:Mean sea level pressure (hPa).
Parameters monitored	:HT(m)	:Station height (in metres) as given in WMO No. 9 Vol A
	:RP	:Pressure reporting practice M=mean sea level pressure (hPa) reported. S=Station level pressure reported. 8=Geopotential height (m) of 850 hPa surface reported. 7=Geopotential height (m) of 700 hPa surface reported.
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:%REJ	:Percentage of observations flagged.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.
GROSS ERROR LIMIT	:15 hPa	(pressure)
SELECTION CRITERIA	:NOBS	≥ 20 ,and one or more of the following:
	1. bias	≥ 4 hPa
	2. SD	≥ 6 hPa
	3. PGE	≥ 25 .

Note:- For stn ht ≥ 500 m, mslp is that calculated from station level pressure where available.
For stn ht < 500 m, mslp is that as reported by the station where available.

WMO REGION 1:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60445	36.2N	5.4E	1081	S8	117	0	0	84	0.9	4.8	4.9
60468	35.6N	6.2E	1052	S8	90	90	100	21	0.0	0.0	0.0
60511	35.3N	1.4E	1127	S8	117	117	100	100	0.0	0.0	0.0
60571	31.6N	2.2W	773	S8	120	1	1	59	1.0	-4.9	5.0
60670	24.6N	9.5E	1054	S8	118	0	0	100	1.7	8.1	8.3
62795	12.7N	34.1E	445	MS	41	0	0	2	1.3	-4.0	4.2
63333	11.1N	39.7E	1916	MS	59	2	3	85	1.0	6.9	7.0
63453	8.8N	39.8E	1062	S	50	10	20	92	2.4	12.6	12.8
63474	7.1N	40.0E	2450	S	40	40	100	0	0.0	0.0	0.0
63478	5.1N	44.6E	320	MS	30	0	0	0	1.0	6.4	6.5
63801	4.9S	29.6E	885	S8	32	1	3	88	2.2	7.6	7.9
64507	2.9S	11.0E	79	M	35	1	3	3	1.8	-7.3	7.5
68014	19.6S	18.1E	1411	S8	63	0	0	73	2.0	-5.7	6.0

WMO REGION 2:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
23383	66.9N	93.5E	263	MS	91	2	2	3	2.8	5.0	5.7
24266	67.6N	133.4E	137	MS	114	2	2	14	1.9	4.2	4.6
24382	66.4N	143.2E	196	MS	55	0	0	55	2.8	7.1	7.6
24671	63.9N	135.9E	400	MS	98	20	20	74	4.0	10.0	10.8
25538	64.1N	164.6E	326	MS	119	1	1	4	2.1	5.8	6.2
25902	60.8N	151.8E	797	MS	41	29	71	100	0.5	-13.7	13.7
29759	54.3N	89.3E	846	MS	46	0	0	59	1.9	-5.0	5.3
29956	52.8N	99.9E	455	MS	111	2	2	58	2.8	5.5	6.2
29999	52.5N	99.8E	1570	S8	105	104	99	72	0.0	12.7	12.7
30549	54.2N	112.0E	1302	S8	25	0	0	24	4.7	-5.2	7.0
30554	54.5N	113.6E	995	MS	61	2	3	98	1.2	9.6	9.7
30627	53.1N	105.5E	761	MS	57	0	0	21	1.9	-5.0	5.3
30650	53.2N	112.8E	923	MS	59	1	2	2	1.4	-4.0	4.2
30669	53.1N	117.5E	707	MS	59	0	0	5	1.3	-5.2	5.4
30739	52.2N	109.8E	666	MS	58	0	0	10	1.3	-8.7	8.8
30741	52.9N	110.5E	1255	S8	116	7	6	45	3.1	-7.0	7.7
30764	52.6N	115.2E	646	MS	56	0	0	0	1.2	-4.4	4.6
30823	51.8N	107.4E	510	MS	59	0	0	2	1.3	-4.2	4.4
30838	51.3N	108.9E	800	MS	59	1	2	2	1.4	-4.3	4.5
30846	51.4N	112.5E	741	MS	59	0	0	0	1.4	-4.7	4.9
30859	51.1N	114.6E	678	MS	58	0	0	0	1.9	-4.5	4.9
30862	51.9N	116.0E	597	MS	58	1	2	3	1.6	-4.4	4.7
30925	50.4N	106.5E	789	M	58	1	2	5	1.6	-4.0	4.3
31532	50.8N	132.2E	234	MS	103	0	0	2	2.4	5.9	6.4
36058	51.4N	86.0E	420	MS	92	1	1	16	3.1	4.2	5.2
36428	49.2N	84.5E	401	MS	121	0	0	56	2.3	4.5	5.1
36870	43.4N	77.0E	663	MS	61	61	100	100	0.0	0.0	0.0
36974	41.4N	76.0E	2049	S8	108	1	1	13	2.2	4.5	5.0
36982	41.9N	78.2E	3614	S7	94	5	5	23	2.4	-4.5	5.1
38611	41.0N	71.6E	474	M	122	0	0	6	2.0	6.4	6.7
38836	38.6N	68.8E	824	MS	47	2	4	6	2.2	4.5	5.0
38933	37.8N	68.8E	430	M	61	0	0	0	2.3	4.1	4.7
38954	37.5N	71.5E	2080	8	109	4	4	22	4.8	5.0	6.9
40701	39.3N	44.4E	1470	MS	109	1	1	96	1.2	8.1	8.2
40726	36.8N	45.7E	1385	MS	109	1	1	42	1.6	4.5	4.8
40743	36.2N	57.7E	941	MS	111	0	0	16	1.5	-4.0	4.3
40762	35.3N	59.2E	1333	MS	112	33	29	98	2.5	-12.8	13.0
40763	35.2N	58.5E	1060	MS	52	0	0	23	1.5	-5.2	5.4
40783	32.4N	49.7E	1972	MS	46	3	7	91	1.6	-8.1	8.3
40789	33.8N	55.1E	921	MS	93	0	0	99	2.6	8.8	9.2
40836	30.8N	51.7E	1880	MS	98	0	0	99	1.4	7.9	8.0
40859	29.0N	53.7E	1383	MS	101	0	0	100	1.1	10.0	10.1

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
41244	24.2N	55.8E	299	M	71	0	0	99	1.1	7.1	7.2
41254	23.1N	57.7E	1755	S8	89	89	100	28	0.0	0.0	0.0
41304	18.1N	55.2E	269	M	71	0	0	32	2.2	4.7	5.2
41396	16.0N	48.9E	700	MS	27	1	4	93	0.9	7.5	7.6
44212	49.8N	92.1E	936	MS	93	4	4	61	3.7	6.9	7.8
44232	49.4N	102.7E	933	MS	83	0	0	14	2.4	-4.2	4.8
44239	48.8N	103.6E	1210	MS	89	2	2	4	2.1	-4.4	4.9
44275	46.8N	98.1E	2255	MS	85	1	1	20	1.9	-4.7	5.1
44277	46.4N	96.3E	2147	MS	100	4	4	54	1.8	-7.6	7.8
44292	47.9N	107.0E	1338	MS	92	1	1	84	1.5	4.3	4.6
44416	28.6N	81.6E	720	MS	61	1	2	10	2.0	5.0	5.4
44477	27.0N	87.4E	1445	S8	58	58	100	100	0.0	0.0	0.0
47022	40.8N	128.2E	1206	S	117	0	0	31	1.5	4.1	4.4
51156	46.8N	85.7E	1294	MS	121	0	0	51	2.0	-4.7	5.1
51243	45.6N	84.9E	428	MS	121	0	0	18	3.0	4.7	5.6
51288	45.4N	90.5E	1651	S	122	0	0	58	2.2	-5.5	5.9
51334	44.6N	82.9E	321	M	122	17	14	47	2.9	10.2	10.6
51379	44.0N	89.6E	794	M	122	0	0	32	2.4	6.4	6.8
51495	43.5N	91.6E	874	M	121	0	0	7	2.8	4.7	5.5
51573	42.9N	89.2E	37	MS	122	0	0	7	3.5	4.0	5.3
51730	40.5N	81.1E	1013	M	118	1	1	1	1.7	4.3	4.6
51818	37.6N	78.3E	1376	M	119	3	3	34	2.8	9.3	9.7
52378	41.4N	102.4E	960	M	122	0	0	39	2.4	5.6	6.1
52602	38.8N	93.4E	2734	S	121	0	0	36	2.9	-6.6	7.2
53083	44.6N	114.2E	1183	M	122	1	1	72	3.6	6.4	7.3
53352	41.7N	110.4E	1377	M	119	0	0	34	3.4	6.5	7.3
53480	41.0N	113.1E	1416	M	121	1	1	36	3.0	5.7	6.4
53487	40.1N	113.3E	1069	M	122	0	0	25	2.7	6.2	6.8
53502	39.8N	105.8E	1033	M	122	0	0	39	2.3	5.1	5.6
53588	39.0N	113.5E	2898	S	122	0	0	39	2.4	-4.5	5.1
53593	39.8N	114.6E	910	M	118	0	0	64	2.4	4.8	5.4
53705	37.5N	105.7E	1185	M	119	0	0	41	2.3	5.5	6.0
53764	37.5N	111.1E	951	M	122	0	0	4	2.3	4.9	5.4
54386	41.4N	128.2E	1018	M	122	0	0	8	2.9	4.3	5.2
55696	28.4N	92.5E	3861	S	113	1	1	32	2.3	-5.3	5.8
56144	31.7N	98.6E	3204	S	116	2	2	42	2.5	-6.0	6.5
56287	30.0N	103.0E	629	M	118	0	0	5	2.6	6.0	6.5
56385	29.5N	103.3E	3049	S	122	0	0	39	2.4	-5.5	6.0
56444	28.5N	98.9E	3488	S	118	118	100	100	0.0	0.0	0.0
56462	29.0N	101.5E	2994	S	121	0	0	74	2.4	4.7	5.3
57816	26.5N	106.7E	1222	MS	114	111	97	100	0.1	14.8	14.8
58445	30.3N	119.4E	1494	S	121	0	0	28	1.8	-4.2	4.6

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
80099	7.1N	70.7W	128	M	24	0	0	0	0.8	-4.8	4.9
80315	3.0N	75.3W	443	MS	66	0	0	0	2.1	-4.7	5.1
80457	5.6N	67.5W	74	MS	107	0	0	18	2.5	4.1	4.8
82704	7.6S	72.7W	170	MS	68	0	0	1	2.0	-4.7	5.1
82825	8.8S	63.1W	95	MS	46	0	0	24	2.0	-4.6	5.0
83208	12.7S	60.1W	652	MS	53	0	0	0	1.5	4.9	5.1
83235	12.3S	46.4W	660	MS	66	0	0	77	1.3	6.2	6.3
83295	13.4S	39.9W	755	MS	27	0	0	85	1.1	-5.1	5.2
83332	14.1S	46.4W	950	MS	70	13	19	100	0.9	13.6	13.6
83376	15.9S	49.0W	730	MS	70	0	0	36	1.7	-4.1	4.4
83423	16.7S	49.3W	729	MS	71	0	0	62	1.2	-5.0	5.1
83488	17.8S	42.9W	1097	MS	61	61	100	100	0.0	0.0	0.0
83512	18.5S	54.8W	286	MS	54	0	0	2	2.2	-6.2	6.6

WMO REGION 3:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
83531	18.6S	46.5W	896	MS	75	1	1	65	1.2	-6.5	6.6
83587	19.8S	43.9W	850	MS	85	0	0	82	1.2	-7.7	7.8
83689	21.3S	43.8W	1171	MS	58	0	0	98	1.1	4.8	4.9
83704	22.3S	53.9W	369	MS	62	0	0	85	4.8	-4.8	6.8
84425	5.9S	76.1W	184	MS	55	1	2	0	1.6	4.2	4.5
84455	6.5S	76.4W	282	MS	75	1	1	3	1.5	4.7	4.9
84472	7.1S	78.5W	2622	S	41	0	0	98	1.7	-8.1	8.3
84658	12.6S	69.2W	266	MS	84	0	0	7	2.7	4.4	5.2
84686	13.6S	72.0W	3249	S	116	0	0	53	1.9	-8.3	8.5
84782	18.1S	70.3W	469	MS	113	0	0	5	1.9	4.9	5.3
85223	17.4S	66.2W	2548	S7	106	0	0	8	2.1	-4.2	4.7
85312	19.8S	63.9W	992	S	35	3	9	91	2.9	-11.0	11.4
85365	22.0S	63.7W	643	MS	54	0	0	20	2.5	4.6	5.2
85406	18.3S	70.3W	58	M	100	0	0	2	1.5	4.5	4.7
87046	24.4S	65.1W	905	S8	86	84	98	94	0.1	-2.3	2.3
87322	31.3S	66.6W	658	MS	89	89	100	0	0.0	0.0	0.0
87506	35.5S	69.6W	1425	S8	88	0	0	5	2.2	-4.4	4.9
87803	42.9S	71.2W	785	MS	113	1	1	19	2.1	-4.0	4.5
87814	43.8S	68.9W	460	MS	50	0	0	2	2.0	-4.0	4.5

WMO REGION 4:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
71421	51.9N	63.3W	561	MS	117	1	1	59	1.8	-5.4	5.7
71882	51.0N	118.2W	443	MS	102	0	0	40	4.3	7.2	8.4
71887	50.7N	120.5W	346	MS	122	0	0	6	3.8	5.6	6.8
71889	49.5N	119.6W	344	MS	122	1	1	40	3.5	4.4	5.6
71891	50.2N	121.6W	229	MS	101	0	0	4	4.2	5.8	7.2
71917	80.0N	85.9W	10	MS	120	2	2	45	4.3	8.5	9.5
71958	58.4N	130.0W	816	MS	21	0	0	0	1.5	4.2	4.5
71966	64.1N	139.1W	370	MS	61	0	0	20	3.5	7.3	8.1
76118	30.4N	109.7W	1040	MS	42	1	2	100	1.4	-11.4	11.5
76373	25.3N	105.8W	1967	MS	72	70	97	99	0.4	14.5	14.5
76539	22.1N	101.0W	1871	MS	92	0	0	80	1.1	-5.1	5.2
76632	20.1N	98.7W	2417	MS	73	1	1	96	1.3	-8.1	8.2
76692	19.1N	96.1W	13	MS	92	0	0	0	1.1	4.7	4.8
76726	18.9N	99.3W	1560	MS	81	2	2	98	1.3	-8.1	8.2
76750	18.5N	88.3W	3	MS	106	0	0	1	1.0	-4.1	4.2
76762	17.5N	99.5W	1360	MS	67	4	6	99	1.2	11.0	11.1
76848	16.3N	92.1W	1530	MS	107	38	36	99	1.1	-13.8	13.8

WMO REGION 5:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
94001	6.1S	141.3E	-9999	M	85	0	0	0	1.4	4.0	4.2

WMO REGION 6:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01245	62.6N	9.7E	630	MS	93	0	0	96	1.1	-5.3	5.4
04221	69.3N	51.1W	31	MS	120	0	0	15	2.5	4.3	5.0
04231	67.0N	50.8W	53	MS	122	0	0	54	2.9	5.5	6.2
04266	60.8N	48.4W	33	MS	104	84	81	16	1.3	-1.5	2.0
06670	47.5N	8.5E	432	MS	123	0	0	14	2.2	4.0	4.6
06762	46.2N	8.9E	198	MS	123	0	0	13	4.5	4.4	6.3
06771	45.9N	8.9E	356	MS	119	0	0	9	4.0	4.5	6.0
08221	40.5N	3.6W	633	MS	111	0	0	98	1.5	7.0	7.2

WMO REGION 6:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
11021	49.0N	15.0E	561	MS	117	0	0	26	1.4	4.0	4.2
11101	47.5N	9.7E	438	MS	119	0	0	3	2.2	4.1	4.7
11105	47.3N	9.6E	440	MS	49	0	0	2	2.7	4.7	5.4
11128	47.0N	11.5E	1450	S8	55	0	0	13	1.2	4.5	4.7
11130	47.6N	12.2E	508	MS	120	0	0	18	2.3	4.0	4.6
11141	47.4N	13.2E	550	MS	116	0	0	11	2.0	5.4	5.8
11241	47.2N	15.5E	1438	S8	83	36	43	82	5.3	-7.1	8.9
11348	47.1N	13.8E	1153	S8	28	0	0	11	1.1	4.1	4.2
11360	47.5N	14.1E	710	MS	31	0	0	19	1.4	5.0	5.2
13586	42.0N	21.6E	239	MS	77	0	0	14	2.2	4.0	4.6
15052	47.4N	25.6E	1541	S8	101	0	0	99	1.8	-7.1	7.3
16020	46.5N	11.3E	1461	MS	61	61	100	0	0.0	0.0	0.0
16054	45.7N	7.4E	547	MS	95	95	100	94	0.0	0.0	0.0
16134	44.2N	10.7E	2173	S8	113	1	1	51	3.1	-5.4	6.2
16614	40.4N	21.3E	604	MS	111	0	0	97	1.3	-6.8	6.9
17084	40.6N	35.0E	837	MS	110	0	0	100	1.2	7.9	8.0
17260	37.1N	37.4E	855	MS	107	105	98	100	3.6	11.0	11.6
33791	43.0N	33.2E	124	MS	112	4	4	64	6.7	0.7	6.7
37228	43.1N	44.6E	670	MS	60	1	2	88	2.6	-5.1	5.7
37549	41.7N	44.9E	490	M	69	0	0	3	2.5	4.5	5.1
40184	31.8N	35.2E	809	S8	120	0	0	98	1.1	6.1	6.2

ANTARCTIC:

STATION	LAT	LONG	HT (M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89009	90.0S	0.0	2800	S	90	1	1	16	3.4	-5.0	6.0
89125	80.0S	119.5W	1515	MS	81	3	4	15	3.0	-4.7	5.6
89264	71.4S	68.9W	780	S8	29	0	0	7	2.9	4.4	5.3
89757	73.8S	55.7E	2775	S7	75	75	100	72	0.0	0.0	0.0
89803	68.5S	102.2E	2118	S7	92	0	0	68	2.7	-9.2	9.6
89805	74.1S	109.8E	3070	S7	89	25	28	9	3.3	1.2	3.5
89811	66.7S	112.9E	1362	S8	89	2	2	42	2.4	-7.1	7.5
89828	74.5S	123.0E	3280	S7	30	6	20	33	3.2	6.0	6.8
89832	66.7S	139.8E	240	S	22	22	100	100	0.0	0.0	0.0
89847	67.6S	146.0E	30	MS	29	0	0	28	4.1	-4.8	6.3
89860	74.2S	160.3E	1772	S8	30	0	0	13	2.1	-6.6	6.9

TABLE 4

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
 MONITORING CENTRE: BRACKNELL
 MONTH: January, 95

Monitoring procedures

Period	:One calendar month.
Data monitored	:Statistics for each airline carrier.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:All hours combined.
Level(s) monitored	:70.0 - 500.0 hPa
Elements monitored	:TEMP in °C ; WIND in m s ⁻¹
Parameters monitored	
:N REP.	:Number of observations received excluding duplicates.
:PG	:Percentage of observations with gross errors.
:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
:PC	:Percentage of observations with calm winds.
:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.
GROSS ERROR LIMITS	:10.0 °C ; 60 m s ⁻¹ Vector Wind
SELECTION CRITERIA	:N REP ≥ 20

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				BIAS
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	
AAA	104	4	100	2.8	0.7	103	0	69	0	8.7	1.9
AAL	4004	0	2	2.0	0.1	4017	0	2	0	8.8	1.2
AAN	90	1	8	2.4	-0.7	88	0	10	0	12.2	0.4
AAR	1931	1	1	2.0	-0.1	1931	0	2	0	9.4	0.8
ACA	1026	0	1	1.9	0.1	1039	0	2	0	7.2	0.6
ACI	24	0	0	1.9	1.4	24	0	0	0	6.0	0.3
AEA	147	18	100	3.8	0.5	137	0	9	0	9.1	0.3
AEL	633	0	2	2.1	-0.2	644	0	3	0	9.0	1.4
AFL	74	5	100	4.4	2.6	75	1	100	1	13.5	-0.2
AFR	1375	1	4	2.0	-0.3	1393	0	5	0	8.4	0.9
AIC	36	3	8	2.1	-0.3	37	0	8	0	14.3	2.1
AJJ	66	5	9	2.8	0.9	66	0	2	0	9.8	2.9
AMT	388	0	1	2.2	0.6	395	0	8	0	10.0	1.6
AMX	318	1	38	1.9	-0.1	325	0	3	0	9.3	0.7
ANA	867	0	1	2.0	-0.2	871	0	2	0	8.2	0.8
ANG	25	0	0	0.9	-0.1	25	0	0	0	6.5	2.7
ANZ	3289	1	2	1.8	0.1	3266	0	3	1	7.8	1.5
AOM	709	0	2	1.9	0.2	710	0	100	0	9.0	1.6
ARG	24	0	0	2.1	0.9	25	0	0	0	7.4	1.0
ARP	58	7	9	2.0	0.7	58	0	12	3	13.7	3.7
AUA	64	0	0	2.0	-0.4	64	0	2	0	9.9	-0.1
AVA	362	1	3	2.5	-0.6	367	0	6	0	9.4	2.1
AVN	48	2	4	1.9	0.1	48	0	2	2	7.7	0.2
AZA	419	0	2	2.1	0.4	425	0	2	0	8.0	1.1
BAL	170	1	13	1.9	-0.3	175	0	12	0	9.8	2.2
BAW	1389	1	5	2.3	-0.2	1398	0	5	1	8.7	1.6
BBB	55	0	11	1.5	-0.8	56	0	11	0	6.3	0.7
BWA	426	1	2	1.8	0.6	427	0	37	0	9.8	1.3
CAL	1736	0	2	2.3	0.1	1739	0	2	0	9.0	0.8
CCA	231	2	34	2.7	0.4	231	0	95	0	11.3	0.4
CDN	2661	0	3	2.3	0.6	2669	0	3	0	8.4	1.3
CES	135	0	0	2.2	0.7	135	1	2	0	10.1	0.7
CFC	21	0	19	1.9	0.4	22	0	18	0	8.9	1.4
CFG	1018	0	1	2.2	-1.2	1032	0	1	0	8.2	1.2
CKS	66	0	2	2.5	1.2	69	0	100	0	9.9	2.6
CKT	104	1	8	1.8	0.2	103	1	11	0	10.3	2.3
CLI	46	4	4	2.1	0.0	47	0	0	0	9.3	0.6
CLX	68	1	3	1.9	-0.8	68	0	1	0	9.2	1.2
CMI	1331	1	2	2.0	0.4	1338	0	1	0	8.4	1.1
CMM	338	0	5	2.4	0.4	339	0	5	0	9.2	1.0
COA	823	0	2	2.1	0.7	825	0	2	0	9.2	1.3
CPA	61	0	2	2.2	0.1	60	0	2	0	9.2	-0.4
CRL	345	0	2	1.9	-0.3	349	0	3	1	9.7	1.6
CSA	26	0	4	1.4	-0.6	26	0	8	0	9.3	2.4
CTM	51	0	10	2.2	-1.3	54	0	11	0	7.7	1.2
CUB	164	1	7	2.5	0.9	164	0	45	0	12.4	0.9
DAF	27	0	0	2.4	0.7	27	0	0	0	6.5	0.2
DAL	5010	1	2	2.3	0.6	4857	0	2	0	8.7	1.0
DHL	381	2	100	4.0	-2.4	383	1	100	1	9.5	0.9
DLH	2310	0	6	2.1	0.3	2308	0	9	3	8.0	1.2
DOA	201	1	36	2.4	-0.3	201	0	15	0	9.7	1.0
EIA	30	0	10	2.5	-0.4	32	0	22	0	7.6	0.8
EIN	22	0	9	2.4	-1.0	25	0	24	0	15.3	1.6
ELY	109	2	9	2.2	-0.3	112	0	38	0	10.1	0.0
EVA	1482	1	1	2.2	-0.3	1478	0	5	0	9.8	0.5
EWV	23	0	4	3.7	0.7	25	0	8	4	12.3	0.4
FDX	919	0	3	2.2	0.7	922	0	3	0	8.4	1.5
FIN	393	1	4	1.9	0.3	386	1	5	2	8.5	0.8
FJI	528	2	2	1.7	0.8	525	0	31	1	6.7	0.9

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				BIAS
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	
FKE	25	4	8	4.2	-1.9	25	0	0	0	7.6	-0.7
FKJ	23	0	4	2.4	-0.1	23	0	4	0	11.9	1.4
FMN	30	0	0	1.2	0.5	30	0	0	0	8.5	0.6
GAF	66	0	0	1.8	-0.1	66	0	0	0	6.5	0.6
GFA	50	2	4	1.5	-0.2	50	0	2	0	8.3	1.2
GHA	41	2	2	1.6	-0.7	41	0	0	0	7.9	2.5
GIA	306	1	3	2.0	0.0	308	0	1	0	7.8	1.4
HAL	1238	0	1	2.2	0.8	1241	0	2	0	9.9	1.3
HLF	141	2	4	2.2	-1.0	141	0	1	0	8.8	0.6
HRH	29	7	7	1.6	0.5	27	0	0	0	6.5	-0.2
IBE	1866	1	13	1.9	0.1	1860	0	46	0	9.6	0.9
ICE	457	0	1	1.6	0.2	454	0	2	1	6.6	0.5
JAA	51	0	2	2.5	1.5	51	0	2	0	8.9	2.7
JAL	6242	0	1	2.2	0.5	6253	0	1	0	8.4	0.8
JAZ	48	0	0	1.9	0.8	48	0	0	0	8.1	0.4
KAL	3787	1	2	2.3	0.2	3790	0	2	0	9.1	0.7
KLM	2126	0	2	1.9	0.0	2129	0	2	0	8.6	1.2
LDA	158	1	5	1.8	-1.1	161	0	5	0	8.5	0.6
LDI	347	0	1	2.6	-1.9	345	0	1	0	10.2	1.5
LIB	461	2	2	1.6	0.2	460	0	3	0	8.8	1.1
LOT	387	0	2	1.8	-0.3	392	1	2	0	6.8	0.4
LTU	912	0	2	2.0	0.2	882	0	3	0	9.5	1.6
MAS	232	0	2	2.1	-0.3	229	1	96	2	10.8	1.0
MDA	149	0	3	2.2	0.9	149	0	1	0	7.4	1.0
MKD	44	0	0	2.3	-0.2	44	0	0	0	7.6	0.1
MPH	709	0	3	2.2	-1.0	702	0	2	0	9.0	1.2
MRS	43	0	5	1.8	0.2	43	0	9	0	13.7	6.0
NCA	582	1	1	2.2	0.8	579	0	1	0	8.3	1.0
NGA	123	0	2	1.5	0.3	123	0	100	2	11.9	2.1
NWA	10205	0	2	2.4	1.0	10199	0	2	0	9.1	0.9
OAL	23	0	0	1.5	0.5	25	0	0	0	9.3	4.0
PAC	50	8	10	1.8	0.7	50	0	6	2	7.7	1.3
PAL	1040	1	2	2.5	0.4	1040	0	90	0	9.8	1.1
PAO	305	1	3	1.6	0.2	302	0	4	1	8.3	1.5
PNL	62	3	3	1.9	0.7	62	0	3	0	6.7	1.5
QFA	2015	1	2	1.8	0.3	2005	0	3	1	7.9	1.4
QFX	44	0	0	1.3	-0.1	44	0	0	0	8.7	2.9
RAF	169	0	1	1.8	0.1	166	0	14	0	10.0	3.2
RBA	26	0	0	1.5	0.1	25	0	0	0	8.4	2.5
RIA	80	1	4	3.0	1.6	82	0	1	0	12.0	2.2
RJA	50	0	2	2.5	1.1	50	0	2	0	8.7	0.2
RON	56	4	5	1.4	0.4	57	0	0	0	7.2	1.1
RRR	123	1	15	2.4	0.1	124	0	35	0	9.9	1.7
SAA	196	0	2	2.5	-1.0	196	0	3	1	9.5	1.5
SAB	57	0	0	1.3	0.1	57	0	0	0	7.4	2.6
SAS	1217	1	2	1.9	-0.1	1216	0	2	1	7.9	0.7
SHE	21	0	5	3.4	0.9	21	0	5	0	8.3	2.7
SIA	1279	1	3	2.1	-0.4	1281	0	33	1	9.7	0.8
SOL	40	3	3	1.0	0.4	39	0	0	0	8.2	0.8
SPP	229	0	8	2.0	-0.7	226	0	8	0	9.7	1.6
SVA	100	1	5	1.7	-0.3	107	1	6	0	10.1	2.1
SWR	153	1	6	1.8	0.3	157	0	6	0	10.0	1.9
TAP	451	0	5	2.2	-0.2	450	0	5	0	9.9	1.7
TEJ	57	0	11	2.2	0.5	59	0	8	0	10.5	1.3
THA	289	2	3	2.4	-0.7	287	1	32	1	9.2	0.4
TIH	108	1	3	1.7	0.2	108	0	2	0	8.6	0.5
TOW	88	0	2	2.6	0.0	91	0	40	0	8.8	1.6
TWA	877	0	2	2.0	-0.1	881	0	3	0	9.0	1.2
UAL	70991	1	4	1.9	0.2	71036	0	4	0	8.0	1.0

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	BIAS
ULE	70	0	0	1.7	-0.6	71	0	0	0	8.2	1.5
UPS	651	1	8	2.1	0.0	656	0	9	0	9.2	1.5
USA	99	0	7	1.8	-0.1	100	0	9	0	9.9	2.1
USF	123	1	2	1.7	-0.5	128	0	2	1	8.6	1.8
VIA	620	1	2	1.9	0.6	620	0	3	0	8.6	1.5
VIR	157	0	3	1.8	-0.2	161	1	37	0	8.7	3.2
VRB	27	0	0	2.7	0.1	28	0	0	0	8.0	-0.2
VRG	64	2	5	2.0	0.6	63	0	5	0	9.6	2.2
VSP	103	0	2	2.4	0.4	103	1	3	0	7.8	0.2
WOA	34	3	6	1.5	0.7	36	0	3	0	11.4	-0.8
AN	25901	0	1	1.4	0.1	25622	0	1	0	6.9	1.2
BA	18436	0	22	1.8	0.6	18416	0	21	0	7.6	1.6
DL	940	11	100	4.1	1.0	940	69	100	0	45.1	2.1
KL	8458	0	32	2.4	1.3	8457	0	27	0	8.2	1.9
LH	1484	0	3	1.7	0.4	1480	1	89	0	7.4	1.8
MK	25	4	4	2.3	-0.1	25	0	0	0	9.3	-0.6
NW	43196	0	2	1.8	0.3	43196	0	1	0	6.7	0.8
QF	13864	0	1	1.3	0.2	13849	0	1	0	6.8	0.8
M	212	9	97	3.5	1.4	225	0	97	0	11.3	1.8
N	341	1	4	2.8	1.0	358	0	3	0	10.3	0.8

MEAN DAILY COUNT OF AIRCRAFT 70 - 500 HPA

JANUARY 1995

UNAVOIDABLE OBSERVATIONS

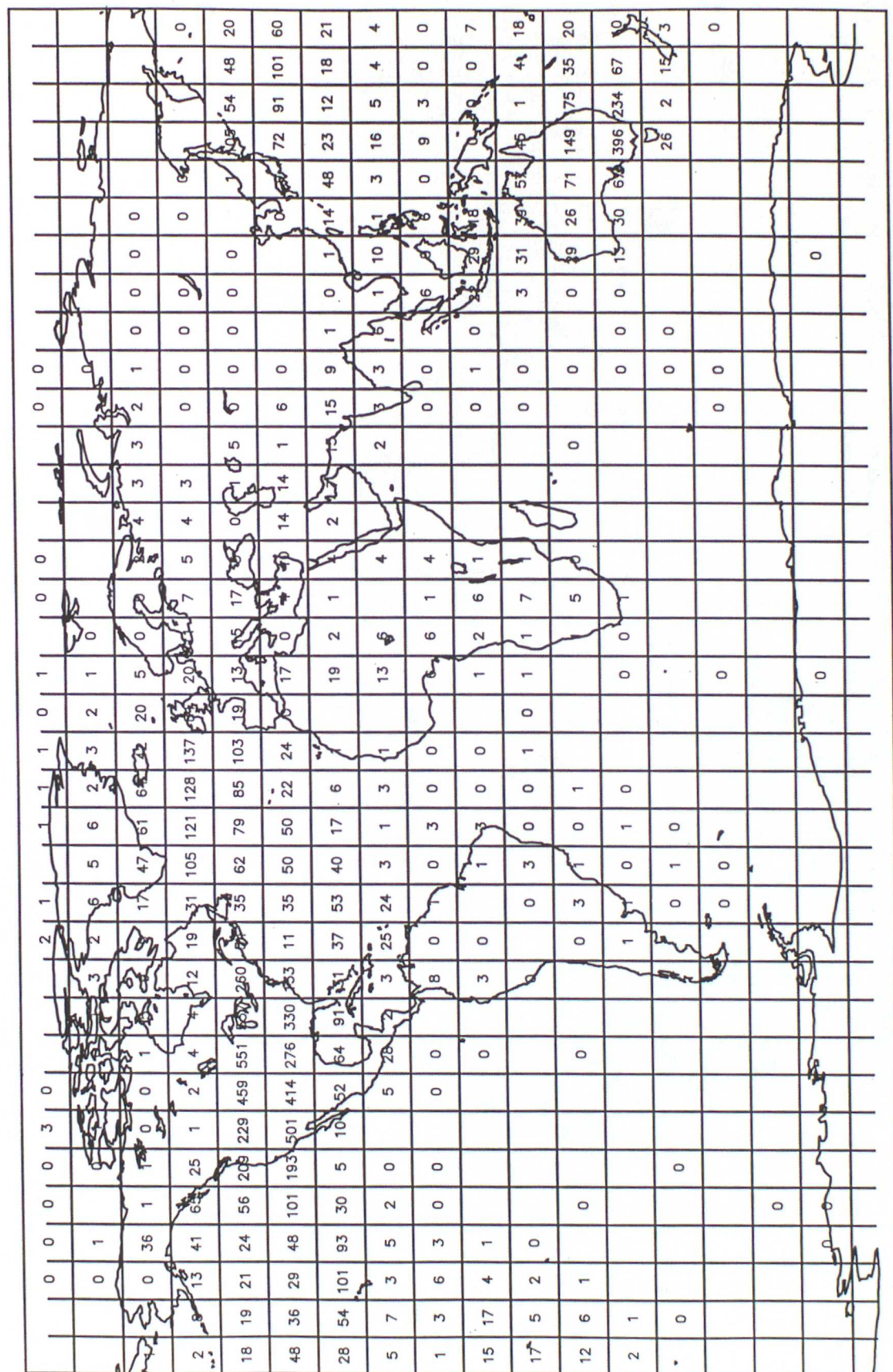


FIGURE 4

AIRCRAFT MEAN WINDS BETWEEN 70 AND 500 HPA

JANUARY 1995

OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

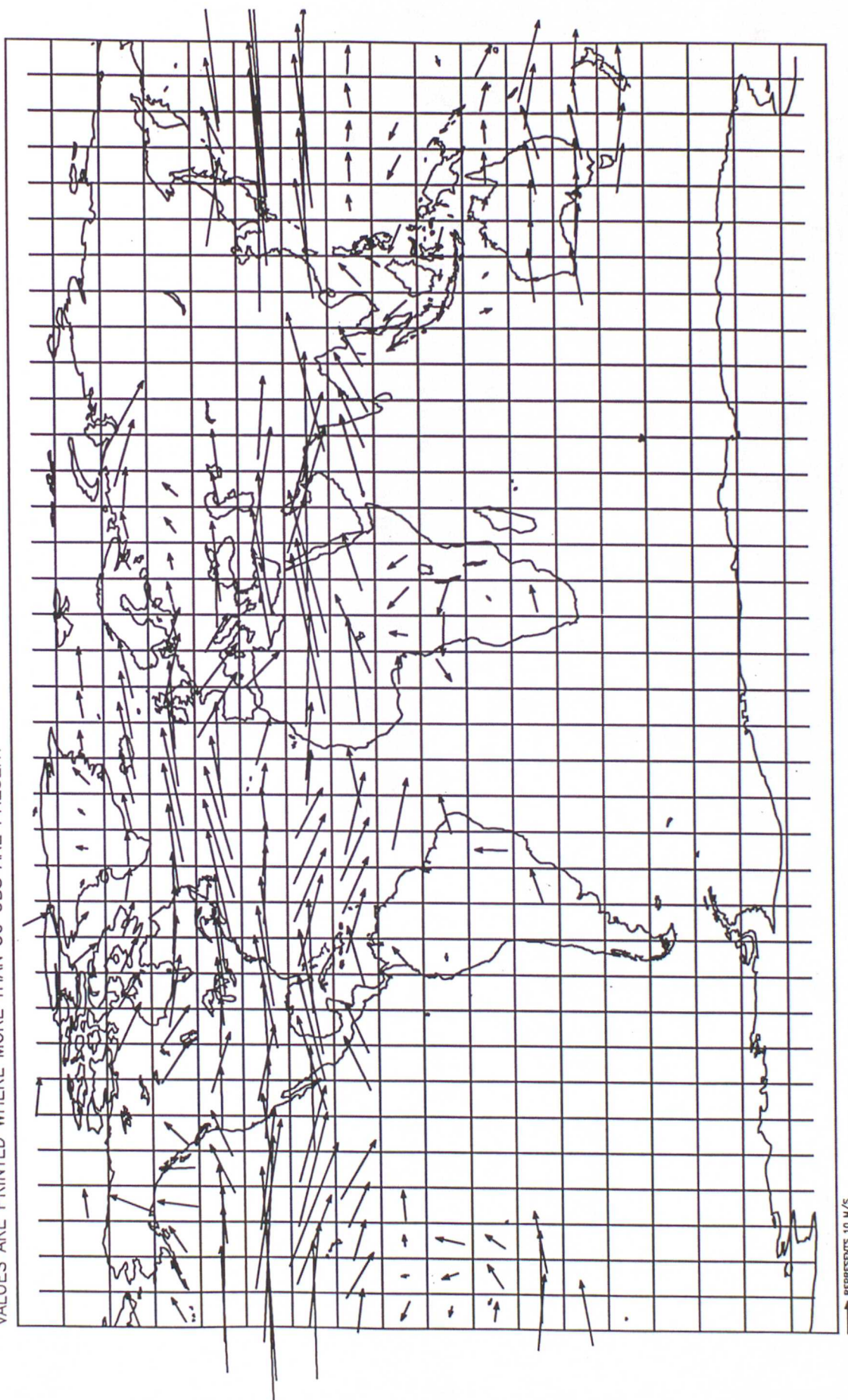
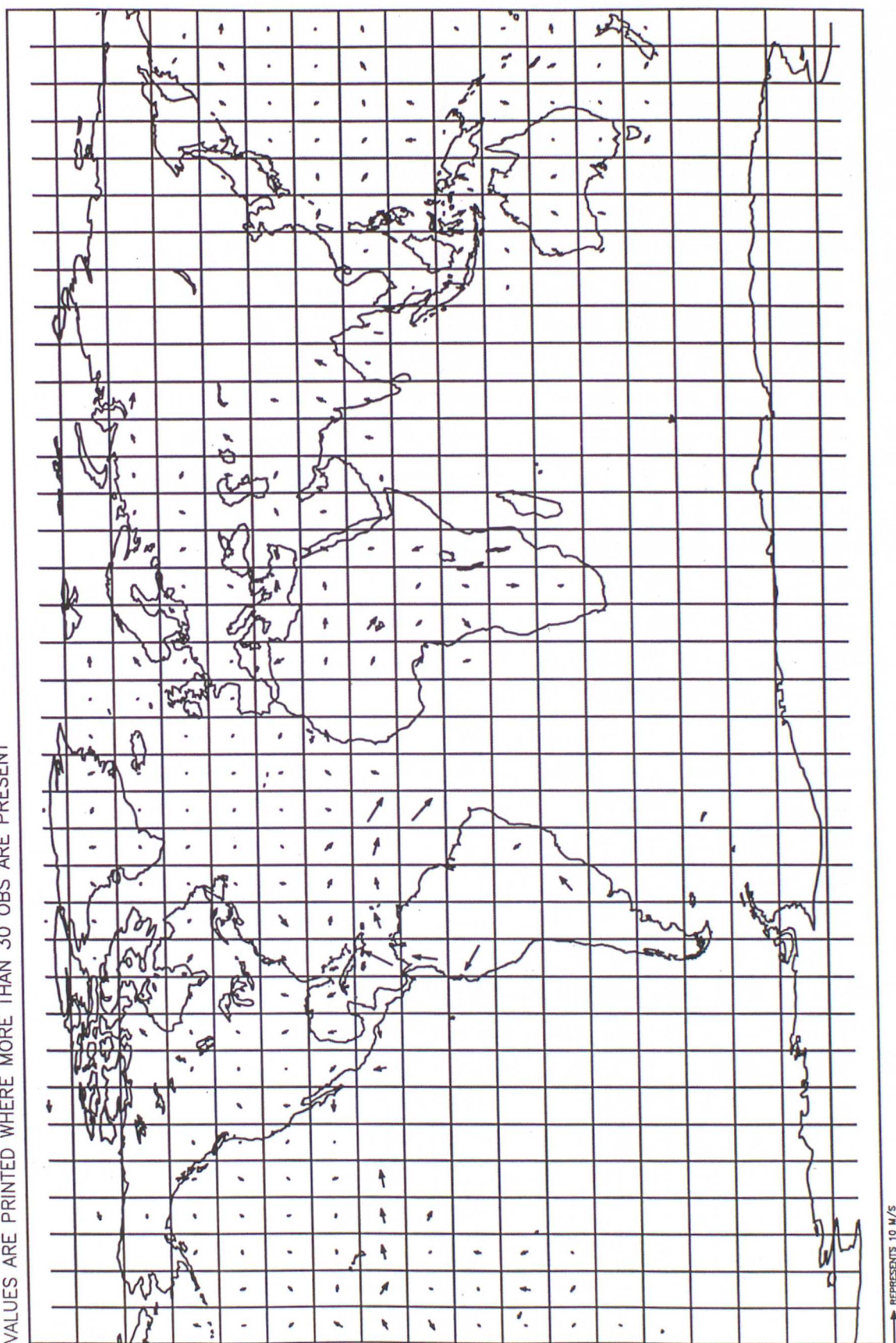


FIGURE 5

AIRCRAFT MEAN O-B WINDS BETWEEN 70 AND 500 HPA

JANUARY 1995

OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



AIRC

FIGURE 7

JANUARY 1995

OBSERVATIONS WITH O-B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT

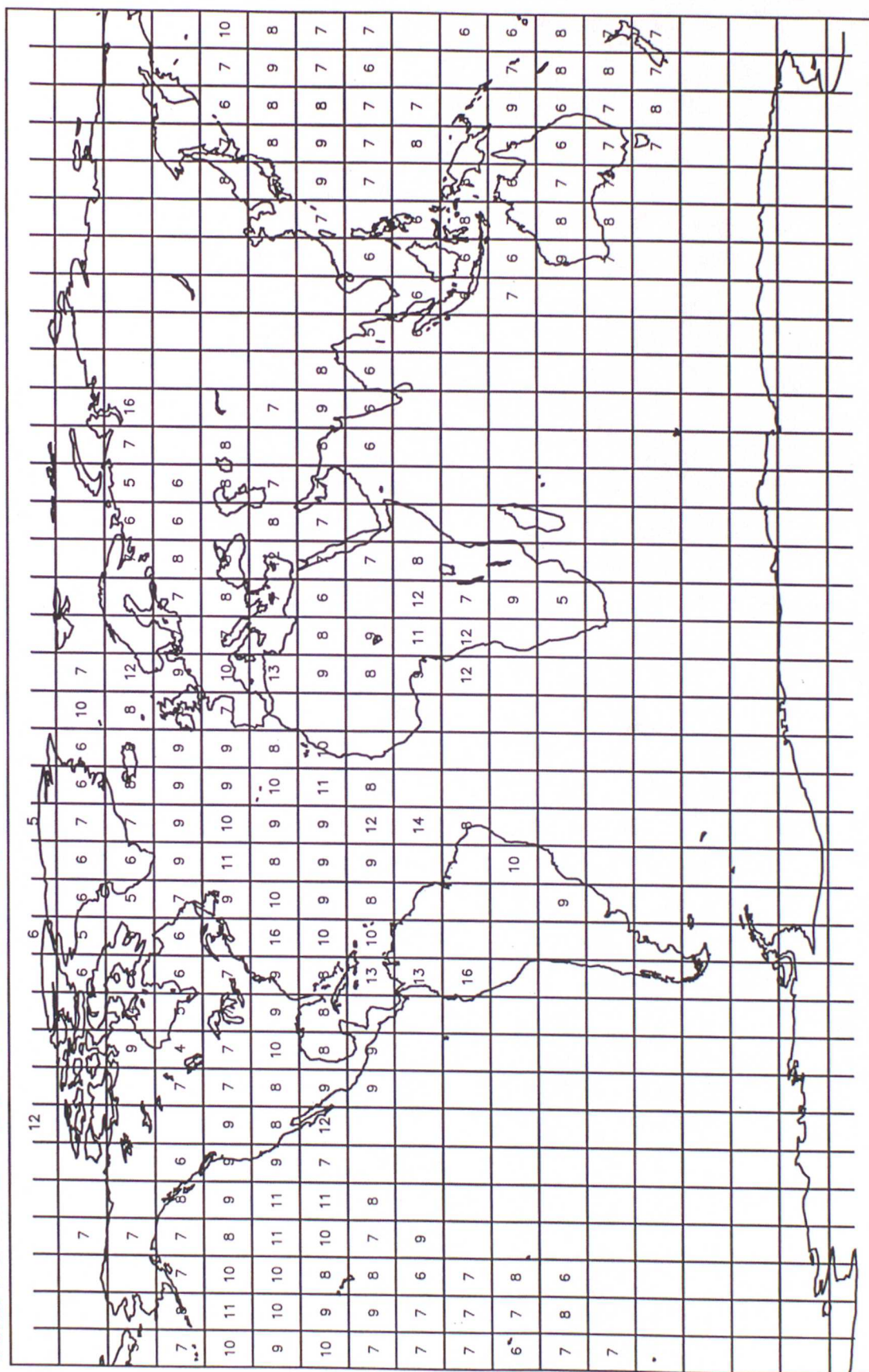


TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
 MONITORING CENTRE: BRACKNELL
 MONTH: January, 95

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for radiosonde TEMPs.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:00 UTC and 12 UTC.
Level(s) monitored	:Standard levels between 1000.0 - 30.0 hPa
Element monitored	:GEOPOTENTIAL HEIGHT IN metres
Parameters monitored	
	:NUM OBS :Number of observations available at level shown during period.
	:NUM GROSS :Number of gross errors at level shown during period.
	:% REJ :Percentage of observations rejected by quality control at level shown during period.
	:SD :SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS :Mean difference of observations from background values at level shown excluding those with gross errors.
	:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS :Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.1
SELECTION CRITERIA	: ≥ 3 levels with ≥ 10 observations and ≥ 100 m weighted RMS.
	ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG		NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
23418	00	Z	70	65/	57	18	0	87.0	-171.1	191.9	7
23418	12	Z	50	65/	57	19	1	158.2	-165.6	229.0	7
41594	00	Z	400	32/	73	12	0	68.3	-34.0	76.3	5
41977	00	Z	250	22/	92	14	0	52.3	-94.8	108.3	7
42101	00	Z	150	30/	76	10	0	82.8	-90.7	122.8	7
42314	12	Z	500	27/	95	12	1	41.0	-36.0	54.5	5
42339	00	Z	300	26/	73	21	0	73.7	9.0	74.2	6
42369	00	Z	200	27/	81	22	0	115.4	-11.8	116.0	5
42369	12	Z	250	27/	81	20	0	93.7	-1.8	93.7	5
42379	00	Z	150	27/	83	20	1	125.4	-39.3	131.4	9
42379	12	Z	50	27/	83	13	1	151.0	-49.8	158.9	4
42397	12	Z	200	27/	88	15	0	100.8	-49.0	112.1	6
42410	00	Z	30	26/	92	10	0	222.9	108.7	248.0	6
42410	12	Z	30	26/	92	10	0	223.9	-48.6	229.1	5
42492	12	Z	200	26/	85	15	0	94.3	-42.1	103.2	4
42647	12	Z	70	23/	73	9	1	109.1	147.1	183.1	5
42809	00	Z	50	23/	88	17	1	138.2	33.1	142.1	4
42971	00	Z	70	20/	86	19	1	181.8	19.1	182.8	7
42971	12	Z	100	20/	86	18	0	116.1	-32.9	120.6	5
43014	12	Z	250	20/	75	21	0	90.1	44.5	100.5	4
43128	00	Z	50	17/	78	14	1	154.2	-90.8	178.9	5
43128	12	Z	100	17/	78	23	0	131.5	47.8	140.0	7
43150	00	Z	200	18/	83	27	0	64.1	70.6	95.4	5
43150	12	Z	200	18/	83	25	0	85.8	47.1	97.9	6
43185	00	Z	150	16/	81	16	0	106.6	-46.6	116.3	6
43185	12	Z	150	16/	81	10	0	93.4	9.7	93.9	5
43192	00	Z	100	15/	74	17	0	143.4	-47.7	151.2	6
43279	00	Z	100	13/	80	28	0	107.7	-79.8	134.0	4
43285	00	Z	30	13/	75	10	0	174.4	158.5	235.7	6
43285	12	Z	50	13/	75	13	0	153.7	113.5	191.1	7
43295	00	Z	70	13/	78	10	0	131.9	99.5	165.2	4
43295	12	Z	150	13/	78	23	0	68.6	101.8	122.8	4
43346	00	Z	70	11/	80	17	1	114.0	-98.9	150.9	6
43346	12	Z	50	11/	80	17	2	162.9	94.1	188.1	7
43353	00	Z	100	10/	76	18	1	124.2	-37.1	129.7	4
43353	12	Z	200	10/	76	22	1	104.3	10.6	104.8	6
43369	00	Z	150	8/	73	16	0	104.2	-94.6	140.7	8
43369	12	Z	70	8/	73	11	0	173.7	52.4	181.4	6
43371	00	Z	70	8/	77	15	2	142.7	-200.3	246.0	6
43371	12	Z	70	8/	77	14	3	193.1	56.7	201.3	8
44277	00	Z	200	46/	96	10	1	59.6	144.3	156.1	4
44373	12	Z	200	44/	104	11	3	51.6	164.1	172.0	6
47058	12	Z	150	39/	126	12	0	68.1	119.2	137.2	4
56739	00	Z	100	25/	98	29	0	51.6	105.3	117.3	4
56739	12	Z	70	25/	98	25	0	66.7	145.2	159.8	6
60360	12	Z	300	37/	8	4	9	110.8	-20.3	112.6	5
62306	12	Z	50	31/	27	10	6	50.1	325.3	329.1	10
62378	12	Z	30	30/	31	8	3	44.8	352.2	355.1	5
96163	00	Z	70	-1/	100	17	0	124.9	115.8	170.3	7
96237	00	Z	100	-2/	106	10	0	112.8	72.6	134.2	6
97014	00	Z	70	2/	125	28	0	82.6	-91.6	123.3	4

ALL HOURS
10 DEGREE BOY AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS -	1391
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS -	

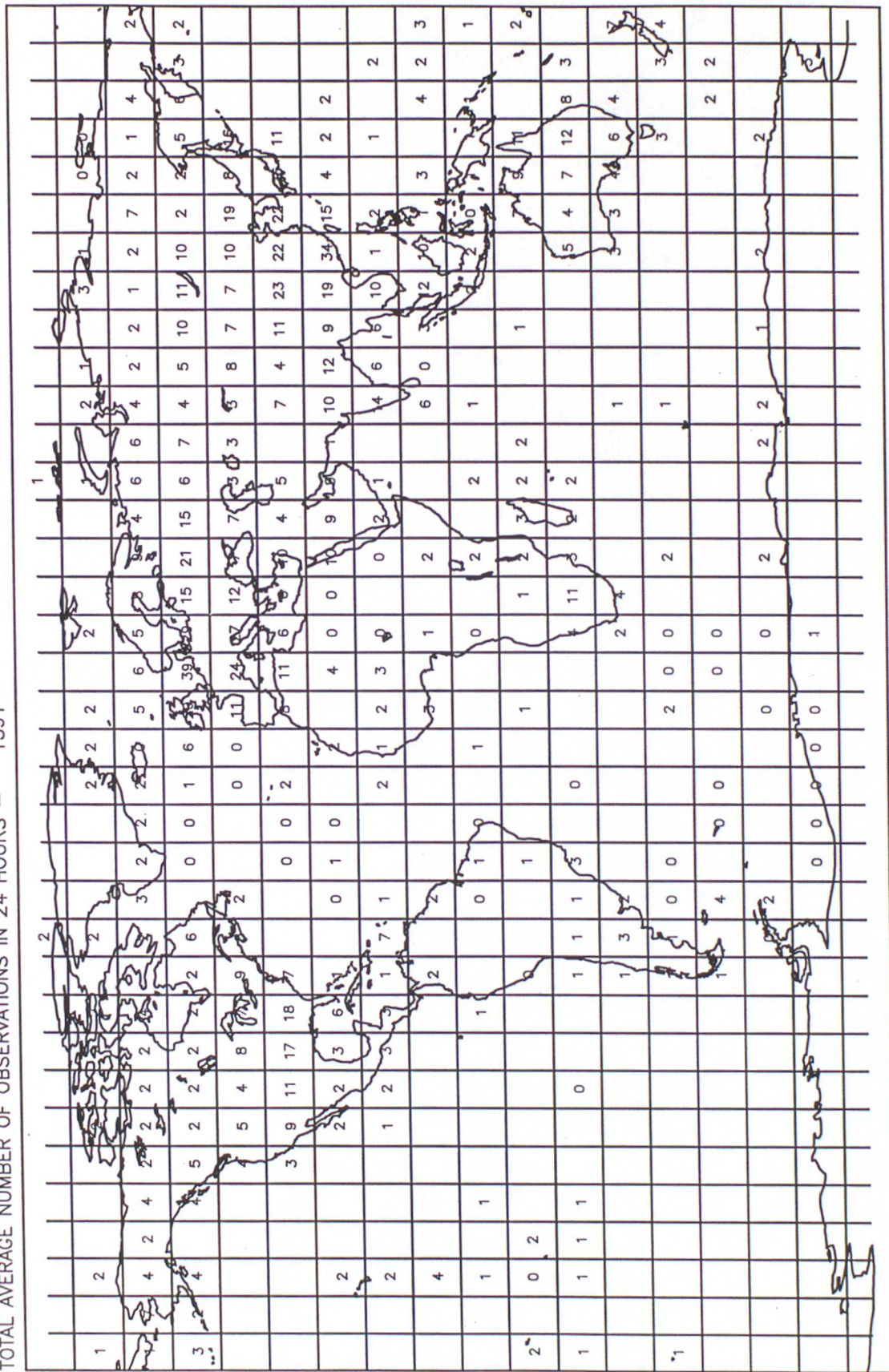


TABLE 6

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
 MONITORING CENTRE: BRACKNELL
 MONTH: January, 95

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for radiosonde TEMPs.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:00 UTC and 12 UTC.
Level(s) monitored	:Standard levels between 1000.0 - 100.0 hPa
Element monitored	:VECTOR WIND in m s ⁻¹
Parameters monitored	
	:NUM OBS :Number of observations available at level shown during period.
	:NUM GROSS :Number of gross errors at level shown during period.
	:% REJ :Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS :Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.2
SELECTION CRITERIA	: ≥ 10 observations and ≥ 15 m s ⁻¹ RMS vector wind.
	ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
37985	00	V	200	39/ 49	12	0	16	-17.0	2.9	19.9	2
42182	00	V	200	29/ 77	26	0	3	-4.4	2.4	16.9	2
42369	00	V	250	27/ 81	23	0	4	-12.3	3.5	15.3	2
42369	12	V	200	27/ 81	15	0	0	-10.4	5.4	17.1	2
42397	00	V	250	27/ 88	11	0	18	-21.7	5.1	24.4	2
42397	12	V	200	27/ 88	9	1	60	-31.3	0.6	32.2	4
42492	00	V	300	26/ 85	16	0	6	6.5	-2.4	15.2	1
47158	00	V	200	35/ 127	27	0	22	-11.7	-2.3	22.2	4
47778	00	V	250	33/ 136	30	0	0	12.6	-1.1	15.3	1
47778	12	V	250	33/ 136	31	0	0	12.9	-1.0	15.7	1
55591	00	V	250	30/ 91	21	0	4	2.7	-0.7	15.1	1
56691	00	V	300	27/ 104	29	0	10	0.6	6.9	18.9	1
58968	00	V	300	25/ 122	30	0	20	10.2	2.1	22.8	2
58968	12	V	300	25/ 122	30	0	16	8.9	2.7	21.8	1

FIGURE 9

ALL HOURS

ALL HOURS
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS -	1213
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS -	

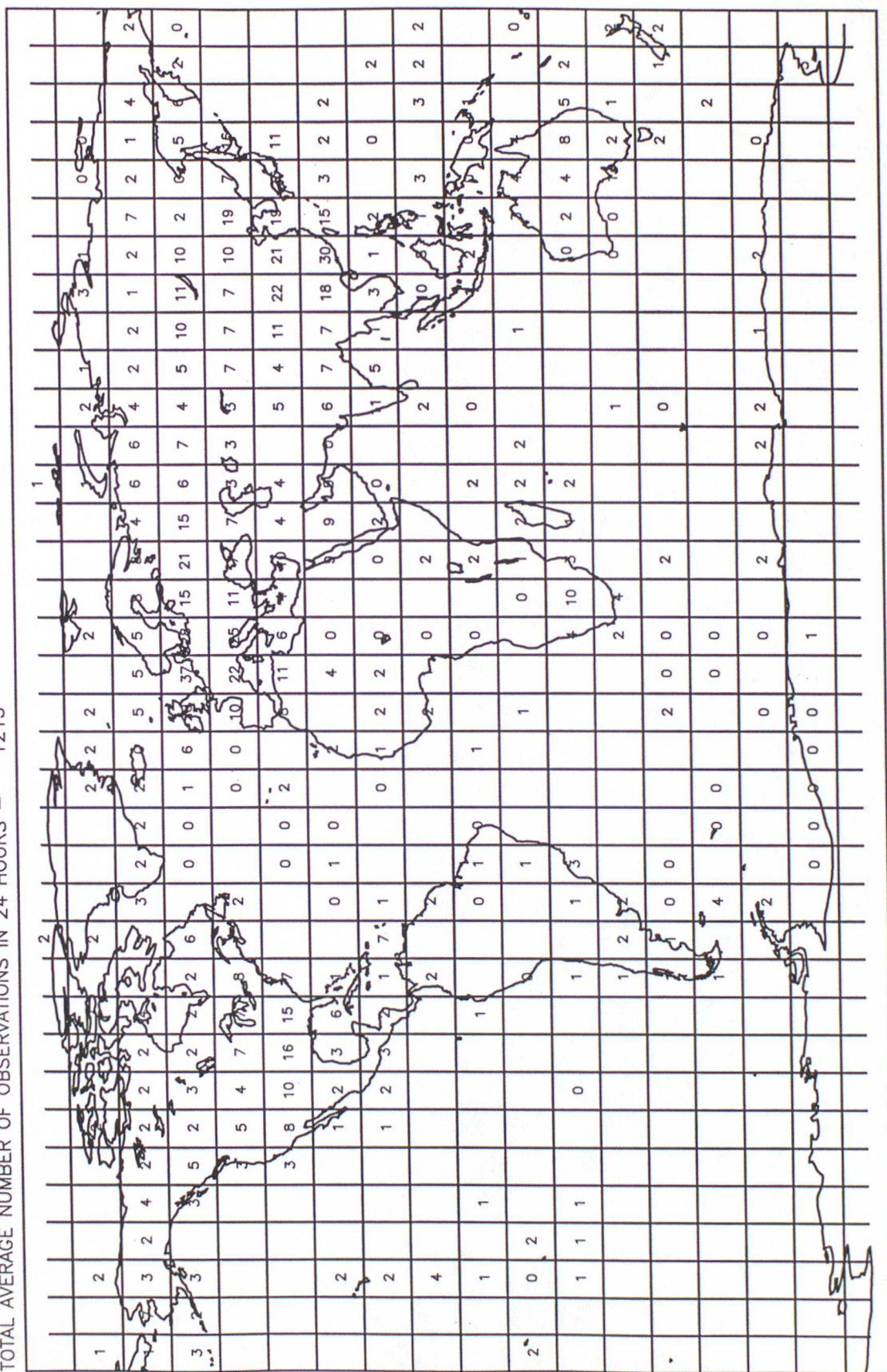


TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
 MONITORING CENTRE: BRACKNELL
 MONTH: January, 95

Monitoring procedures

Period	:One calendar month.
Data monitored	:Reports from each unique identifier for radiosonde TEMPs.
Area monitored	:90°N - 90°S, 180°W - 180°E.
Standard of comparison	:Background field from Bracknell global model.
Observation times	:00 UTC and 12 UTC.
Level(s) monitored	:Standard levels between 500.0 - 150.0 hPa
Element monitored	:WIND DIRECTION in degrees
Parameters monitored	
	:NUM OBS :Average number of observations at all levels.
	:BIAS :Mean difference of observations from background values from all levels.
	:MAX SPREAD : (For observation - background values) Maximum absolute difference of SD at any level from SD at all levels
	:SD :SD of difference of observations from background values at all levels.

SELECTION CRITERIA

:NUM OBS ≥ 5 , and
 ABSOLUTE BIAS $\geq 10^\circ$, with
 SD $< 30^\circ$, and
 MAX SPREAD $< 10^\circ$

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
17280	12	DD	38/ 40	26	-10.7	2.9	9.0
24641	00	DD	64/ 122	20	11.6	6.4	14.1
27199	00	DD	59/ 50	25	10.6	3.6	10.9
31873	00	DD	46/ 134	27	16.5	8.0	11.6
31873	12	DD	46/ 134	28	19.8	4.0	9.8
33837	00	DD	46/ 31	5	-27.9	8.3	15.3
40265	00	DD	32/ 36	23	-17.9	2.5	14.7
42339	00	DD	26/ 73	20	15.2	9.3	11.8
42339	12	DD	26/ 73	20	14.8	2.8	7.4
42724	00	DD	24/ 91	9	-11.3	8.5	8.5
42867	00	DD	21/ 79	23	-13.3	9.9	14.0
42867	12	DD	21/ 79	22	-10.0	5.2	12.4
43279	00	DD	13/ 80	20	-10.6	8.9	19.8
48565	00	DD	8/ 98	9	-19.0	8.5	14.8
53772	00	DD	38/ 113	28	-11.8	5.7	10.6
53772	12	DD	38/ 113	29	-10.7	1.6	7.2
58606	00	DD	29/ 116	28	-11.4	2.7	6.9
58606	12	DD	29/ 116	29	-12.1	3.6	6.8
60571	12	DD	32/ -2	29	10.8	5.0	18.3
60630	12	DD	27/ 2	23	16.0	5.2	19.5
67083	12	DD	-19/ 47	15	11.1	6.9	27.6
78806	00	DD	9/ -80	15	-21.5	8.5	28.3
78866	12	DD	18/ -63	19	15.8	8.3	17.7
85469	00	DD	-27/ -109	9	-11.0	9.9	23.8
89664	00	DD	-78/ 167	14	-20.5	9.2	23.4
97072	00	DD	-1/ 120	12	11.3	7.9	21.1

MONITORING OF SATELLITE WINDS

MONITORING CENTRE: BRACKNELL

MONTH: January, 95

Monitoring procedures

Period : One calendar month.

Data monitored : Reports from GOES, METEOSAT, GMS, INSAT.

Standard of comparison : Background field from Bracknell global model.

Selection Criteria : number of observations > 10.

Data Extracted : Layer: 701 - 1000 hPa
 401 - 700 hPa
 101 - 400 hPa

: Mean wind

: Mean observation minus background vector wind differences

: Mean observation minus background speed differences

: RMS of observation minus background vector differences

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 701 AND 1000 HPA FIGURE 10
JANUARY 1995

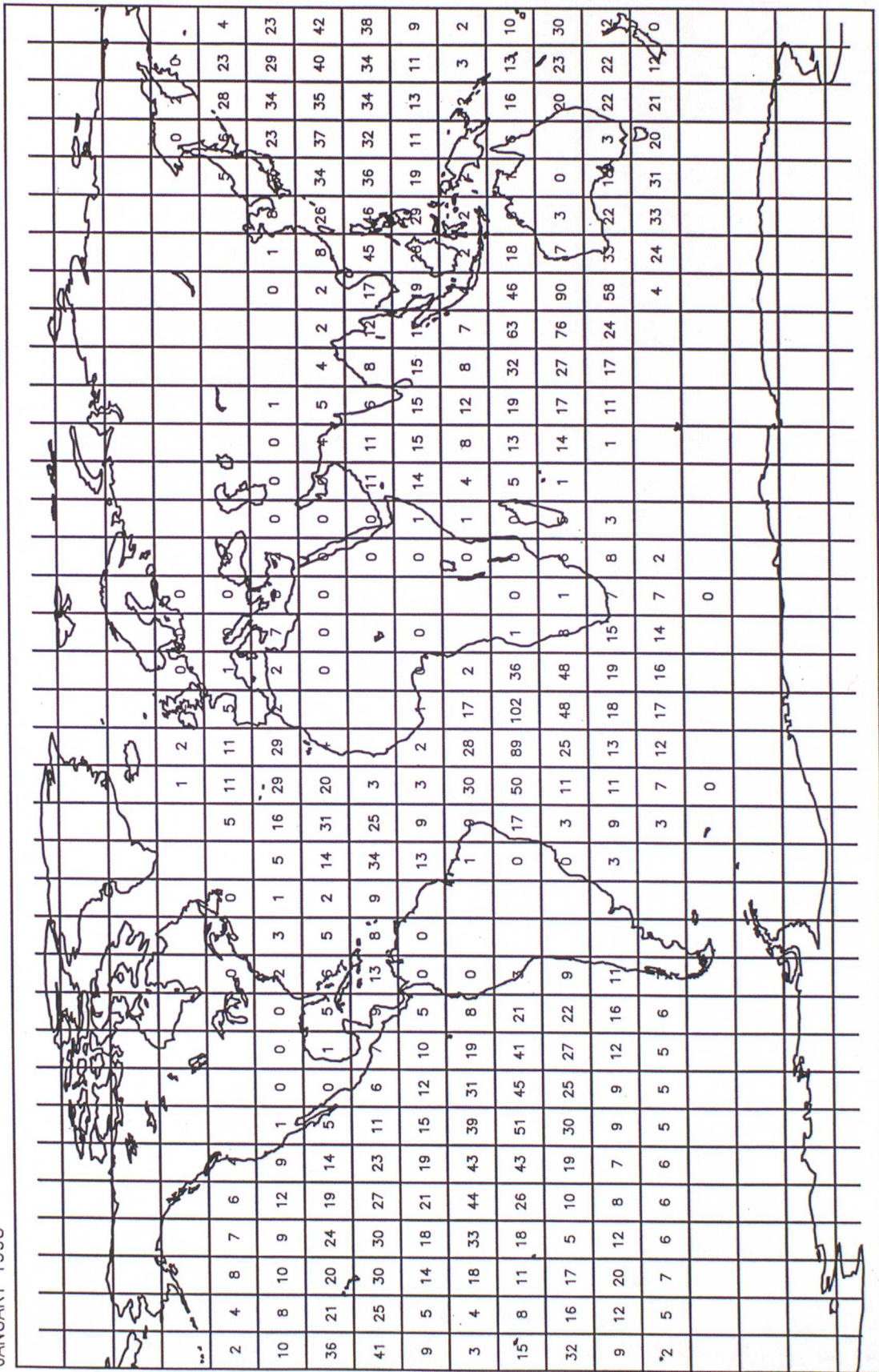


FIGURE 11

SATOB VECTOR MEAN WINDS BETWEEN 701-1000 HPA
JANUARY 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

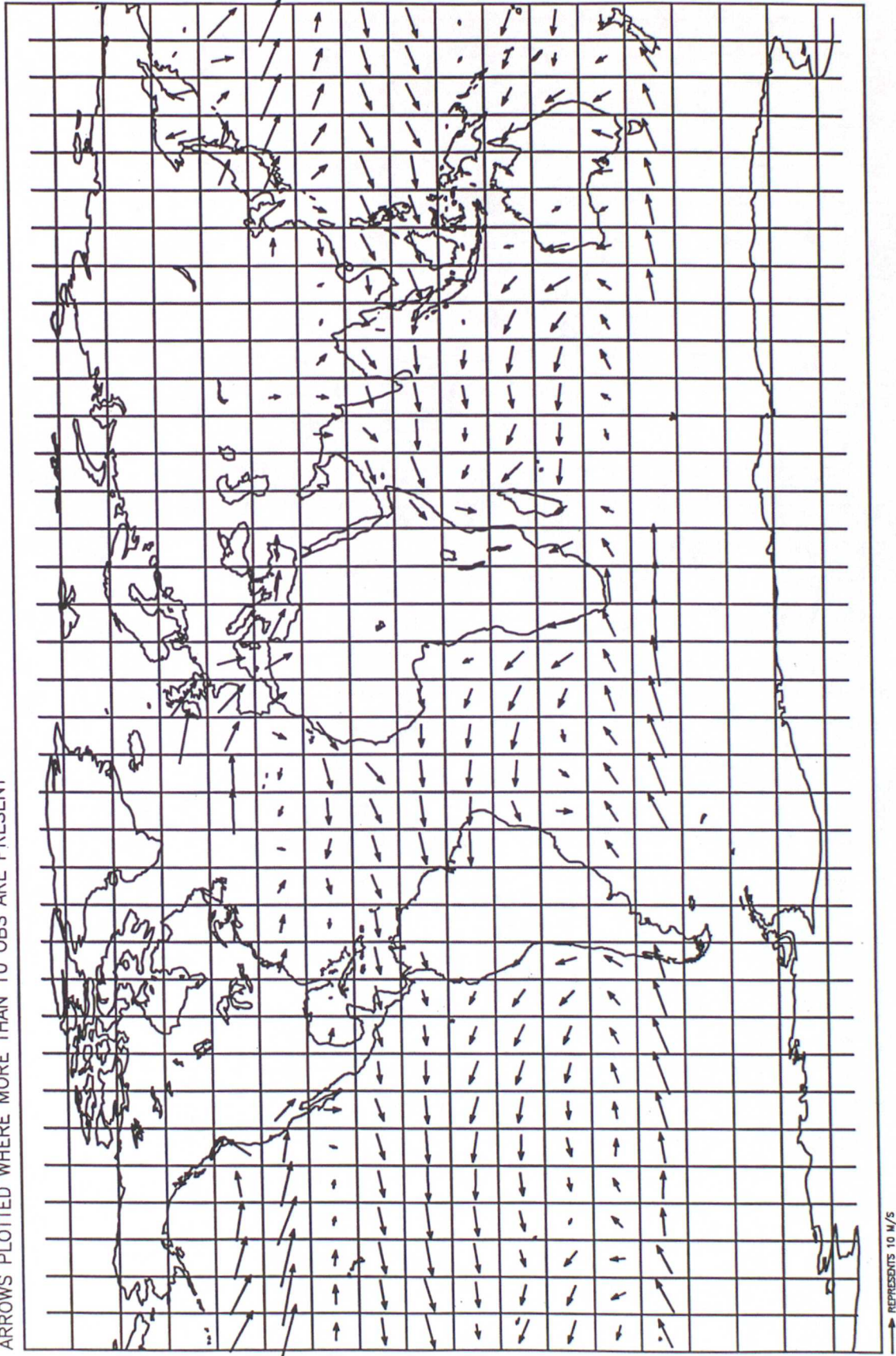
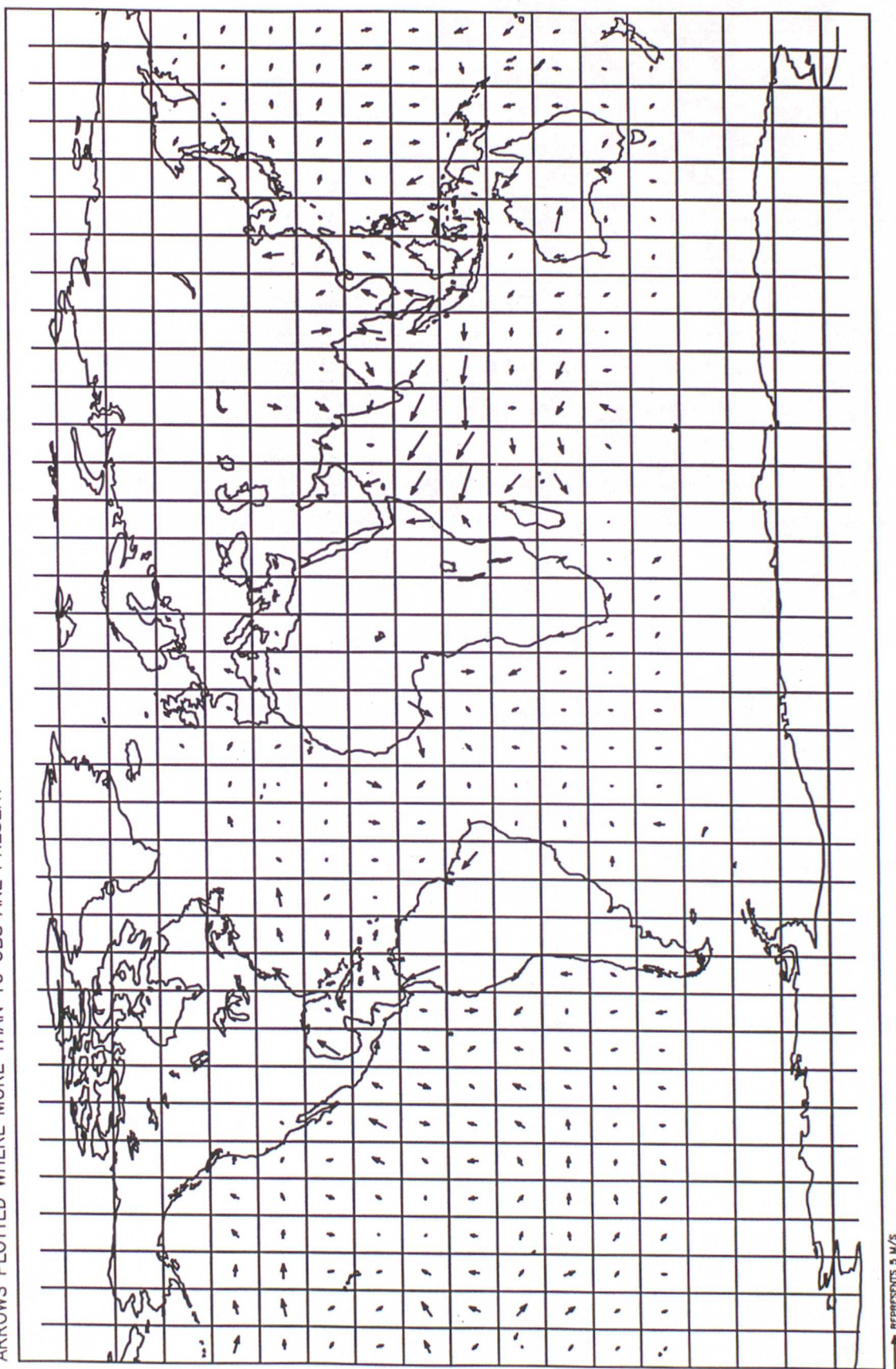
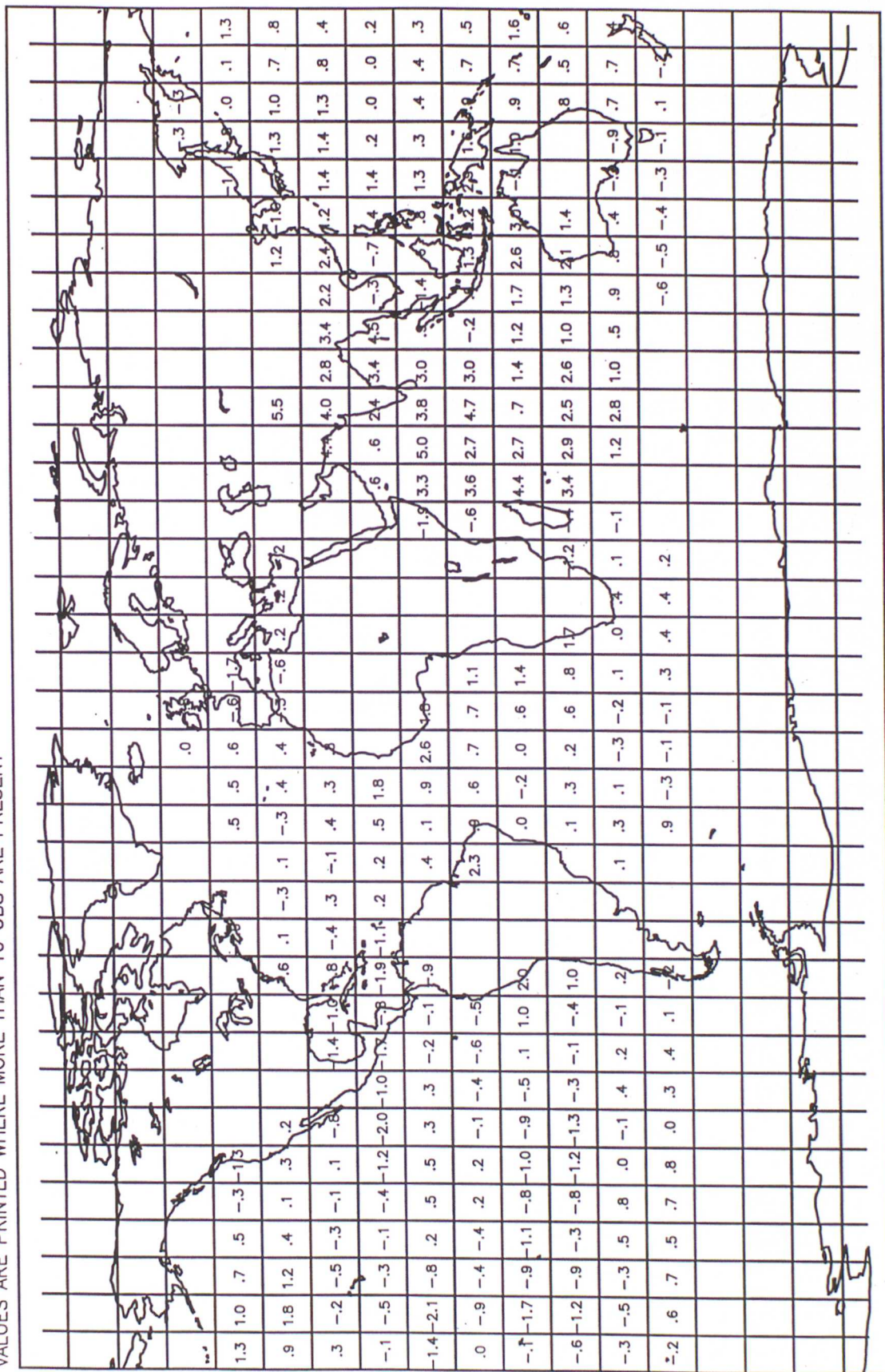


FIGURE 12

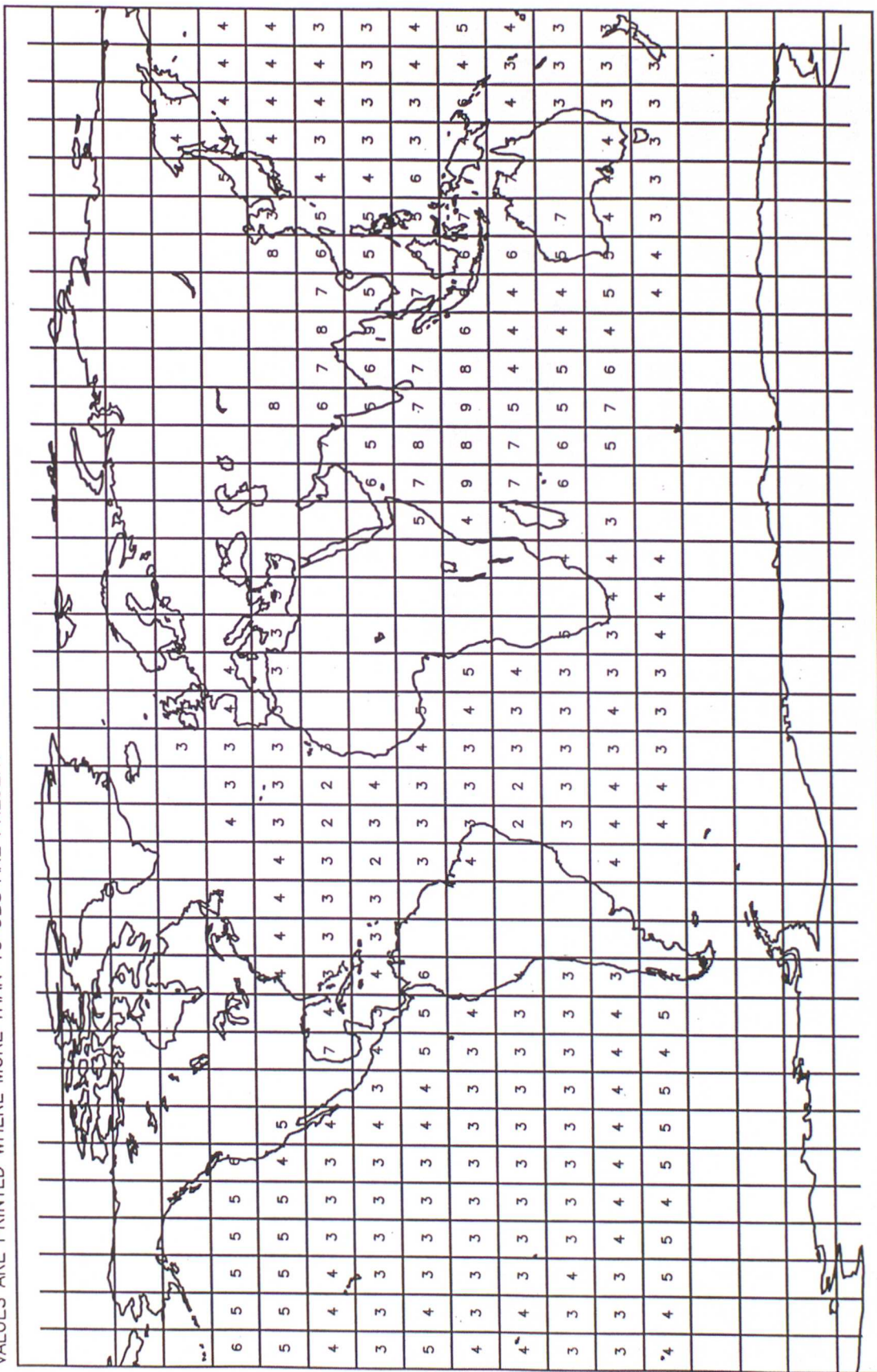
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 701-1000 HPA
JANUARY 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT



SATOB5 : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA
JANUARY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



SATOB5 : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA
JANUARY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 401 AND 700 HPA FIGURE 15
JANUARY 1995

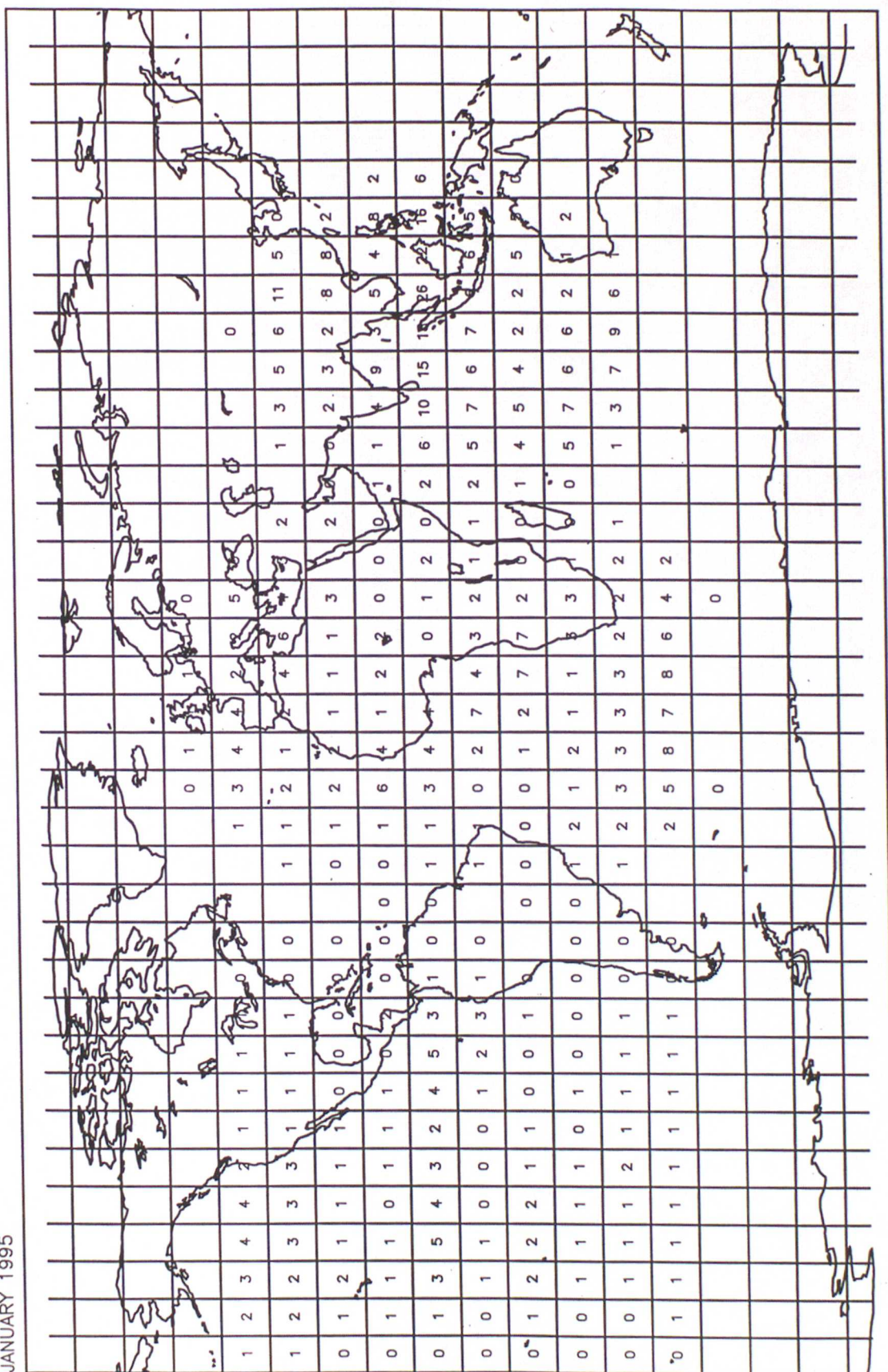


FIGURE 16

SATOB VECTOR MEAN WINDS BETWEEN 401-700 HPA

JANUARY 1995

ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

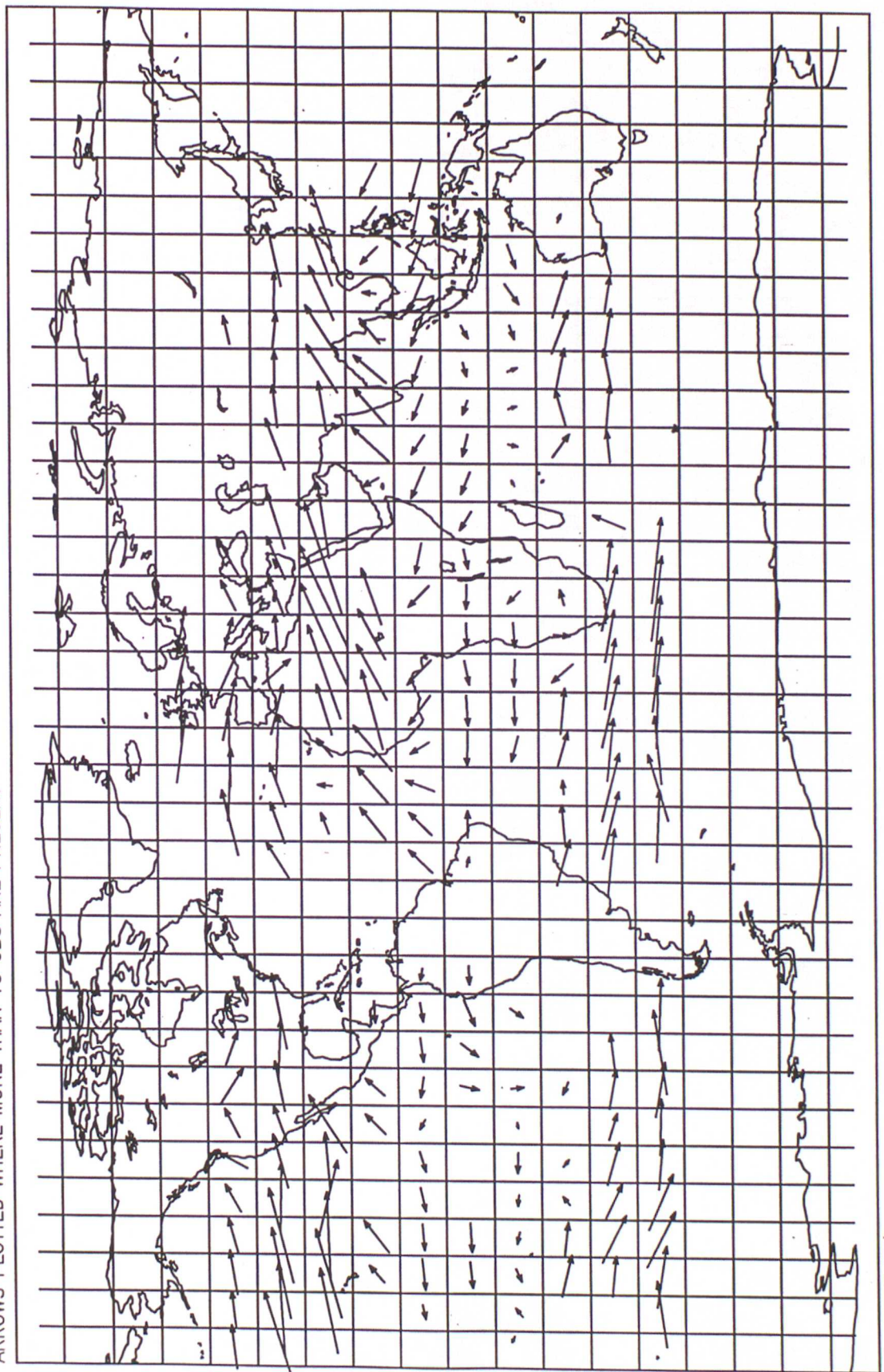
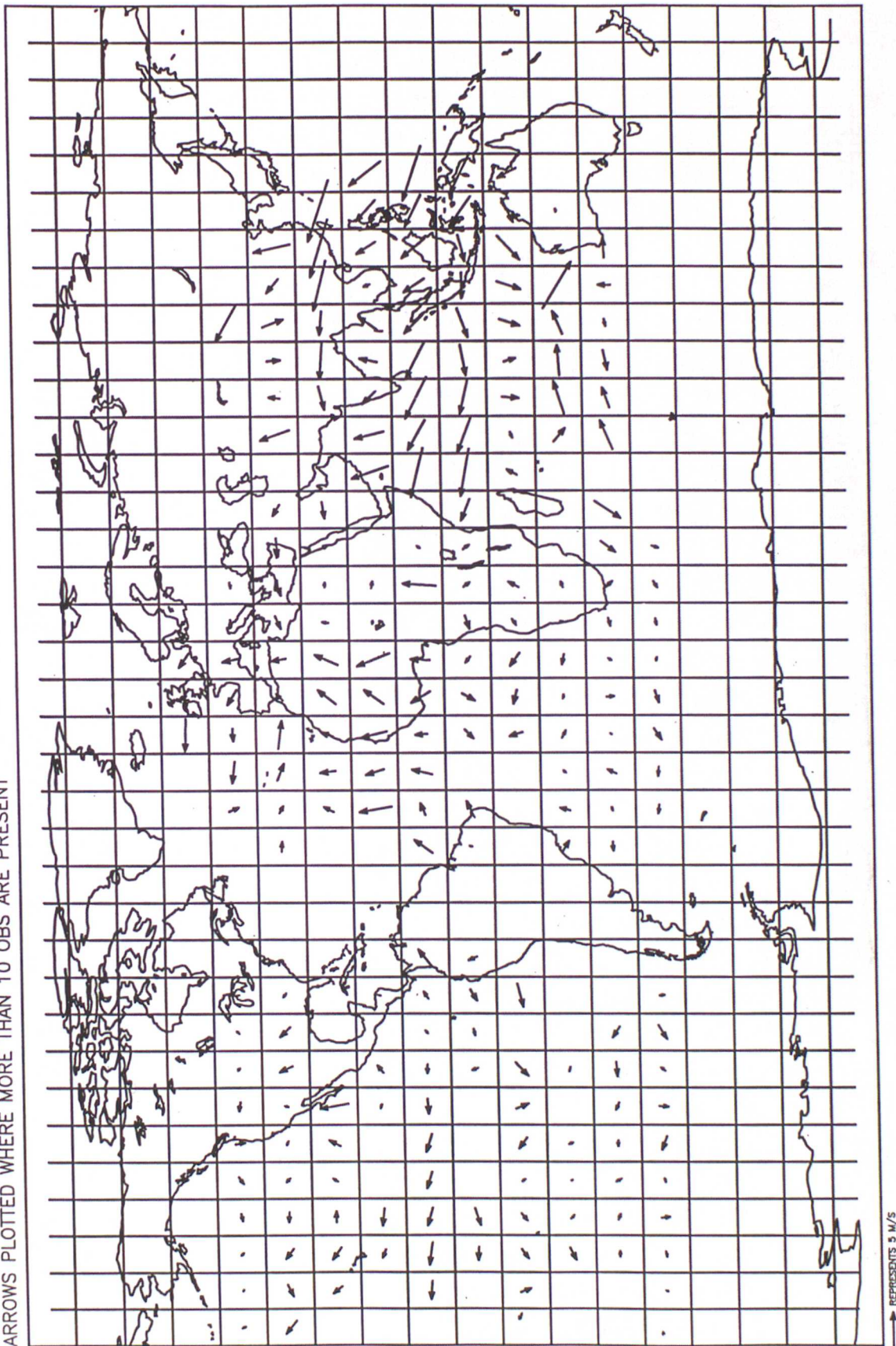
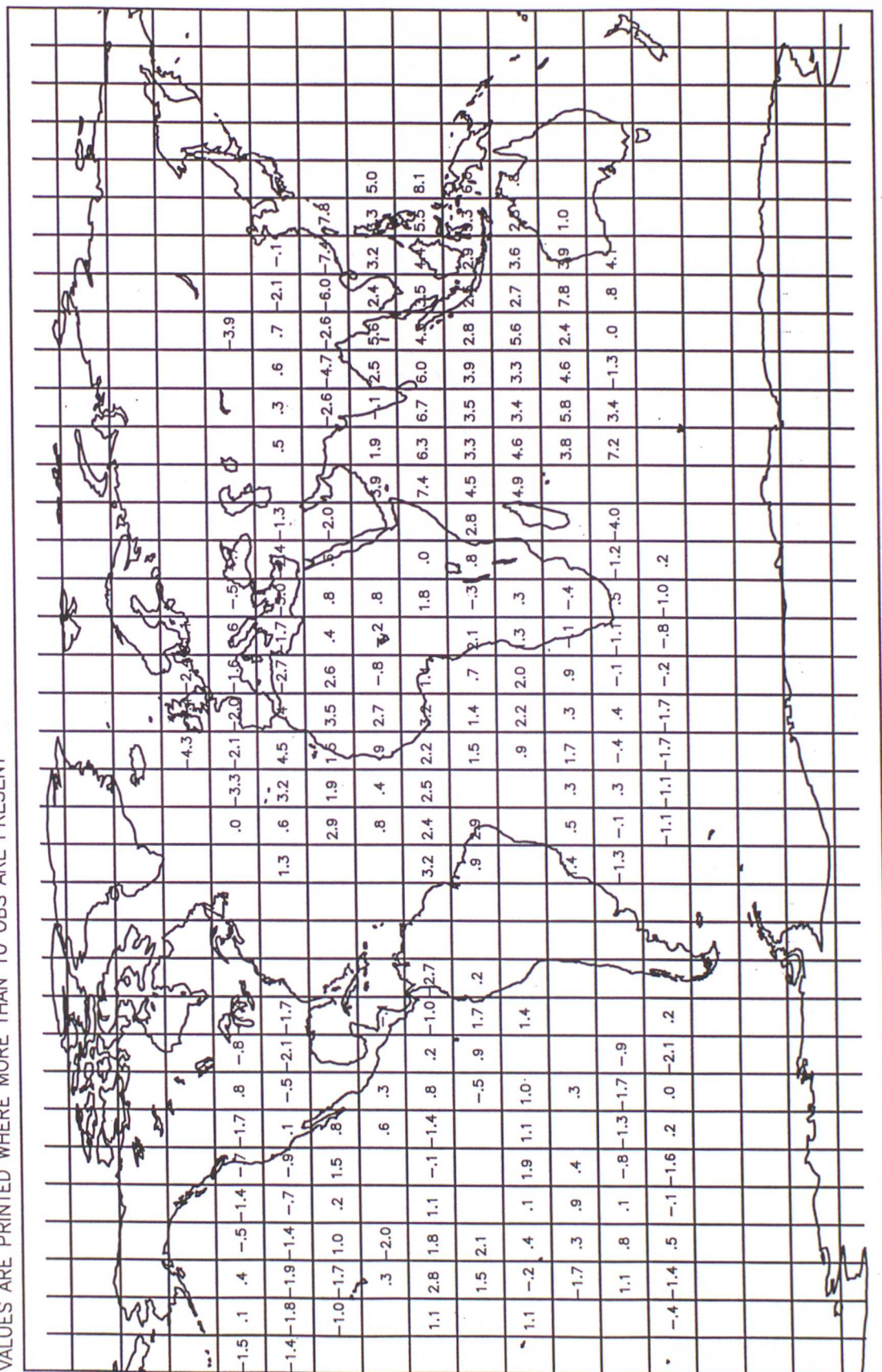


FIGURE 17

SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 401-700 HPA
JANUARY 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT



SATOBs : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA
JANUARY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



SATOB5 : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA
JANUARY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

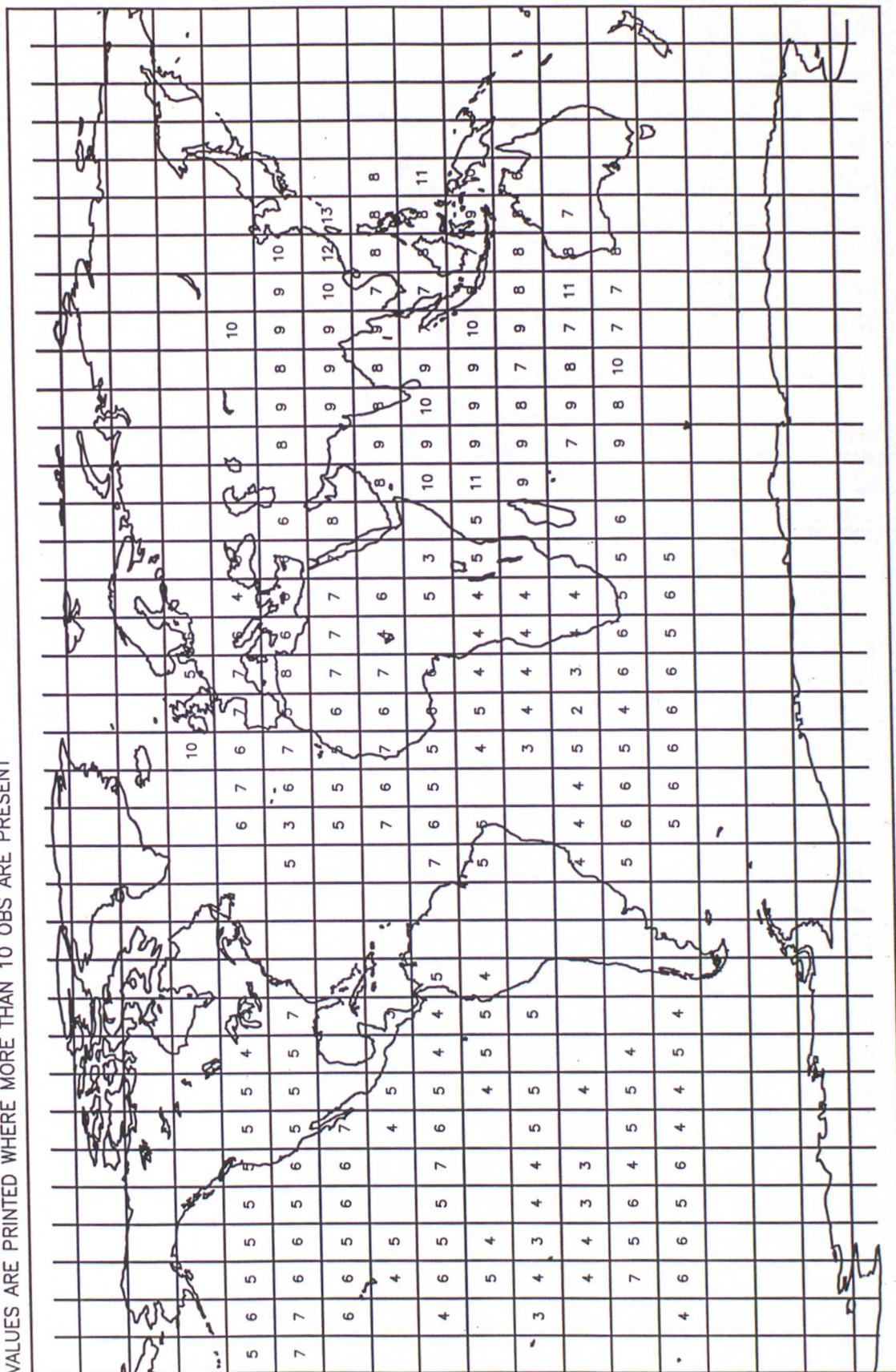


FIGURE 21

SATOB VECTOR MEAN WINDS BETWEEN 101-400 HPA
JANUARY 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

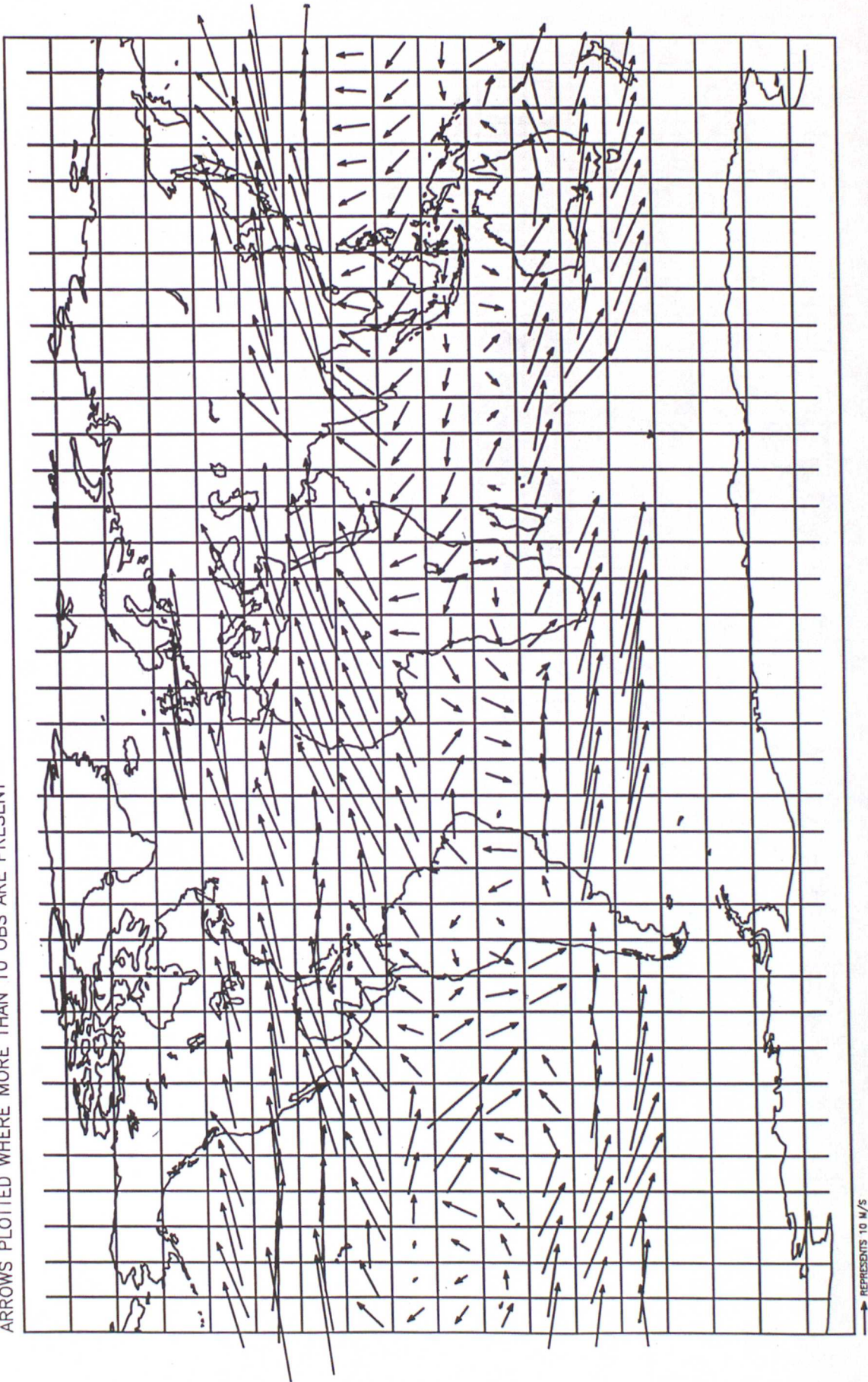


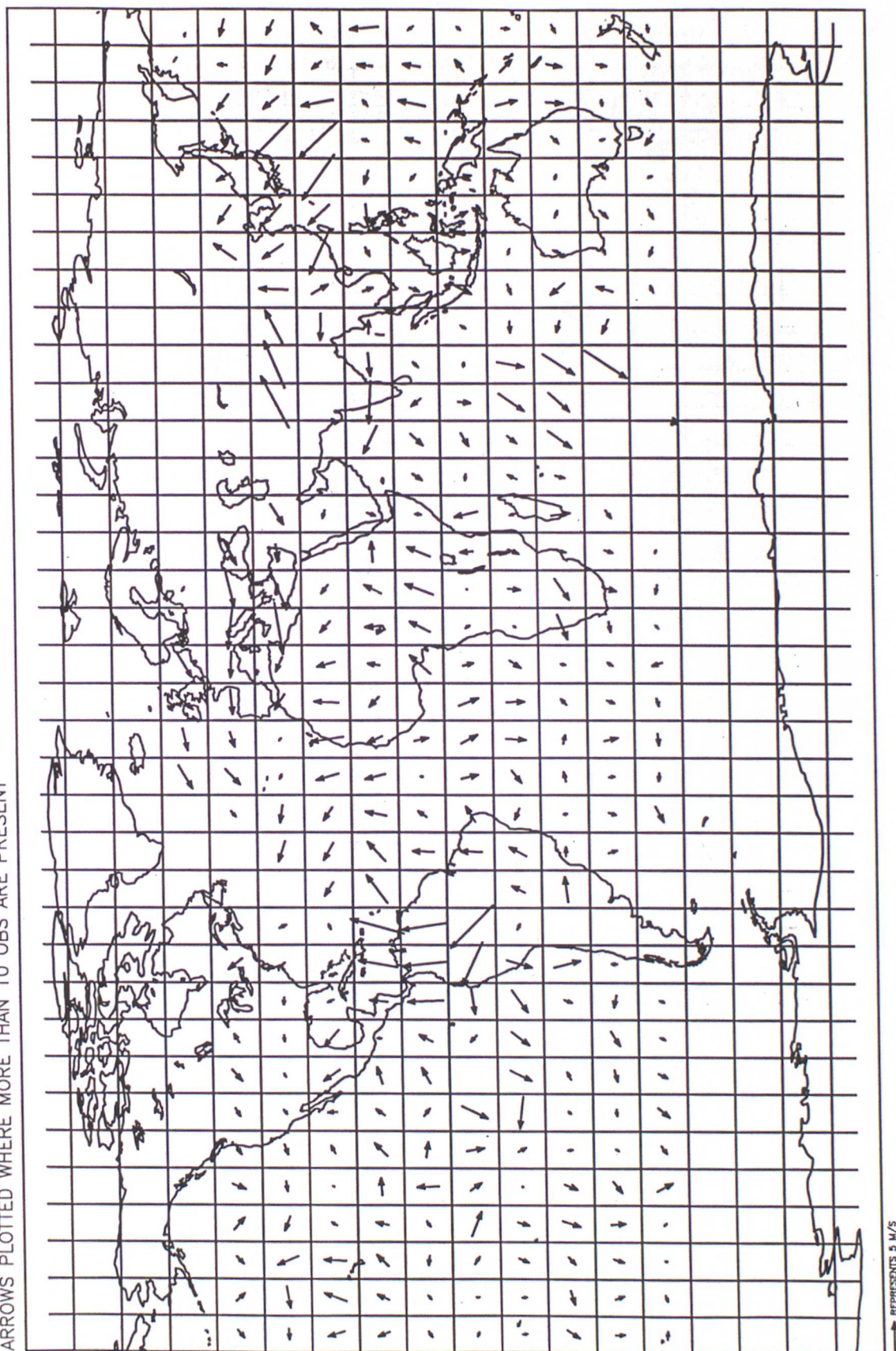
FIGURE 22

SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 101-400 HPA

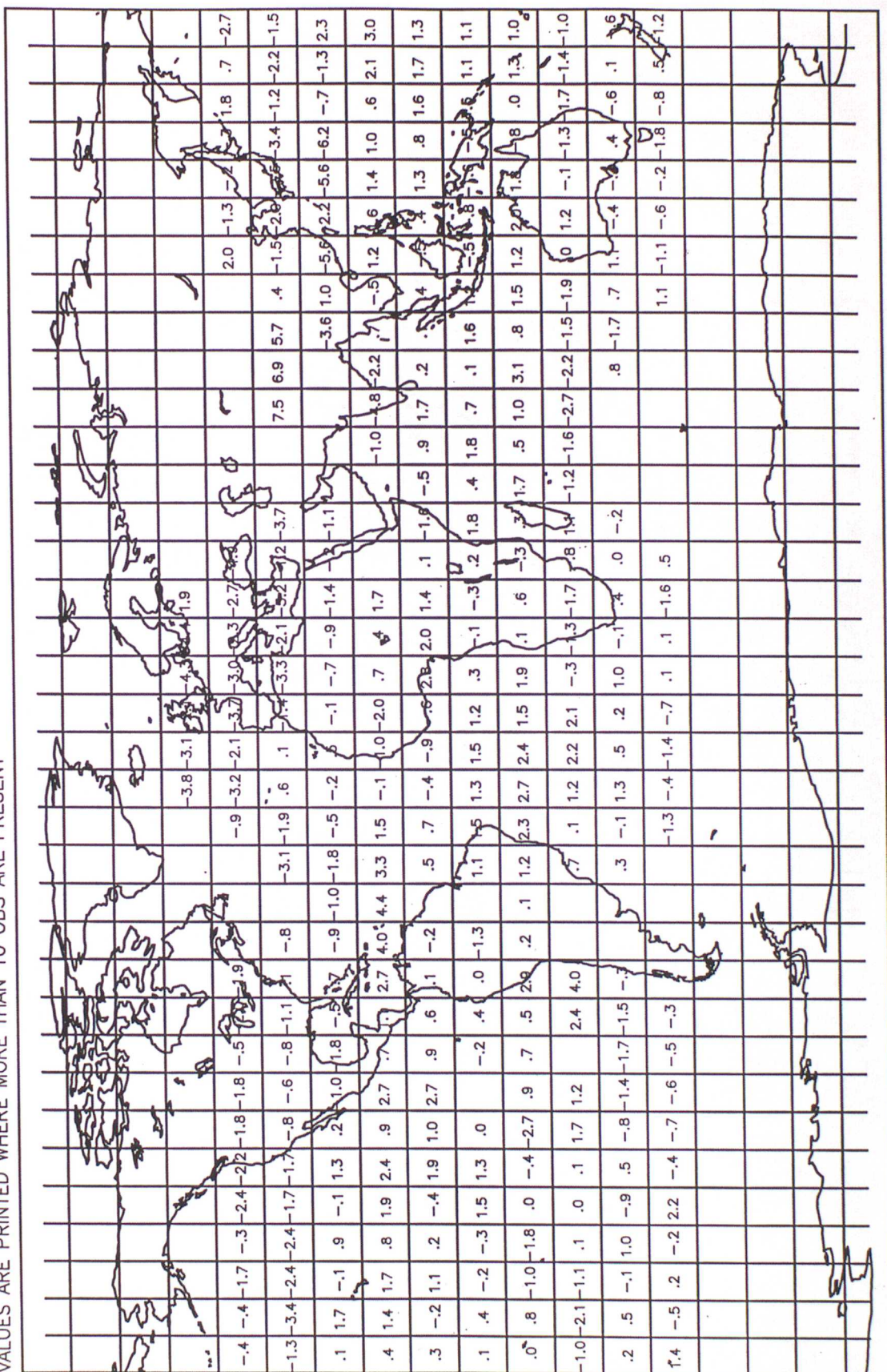
JANUARY 1995

ALL OBSERVATIONS

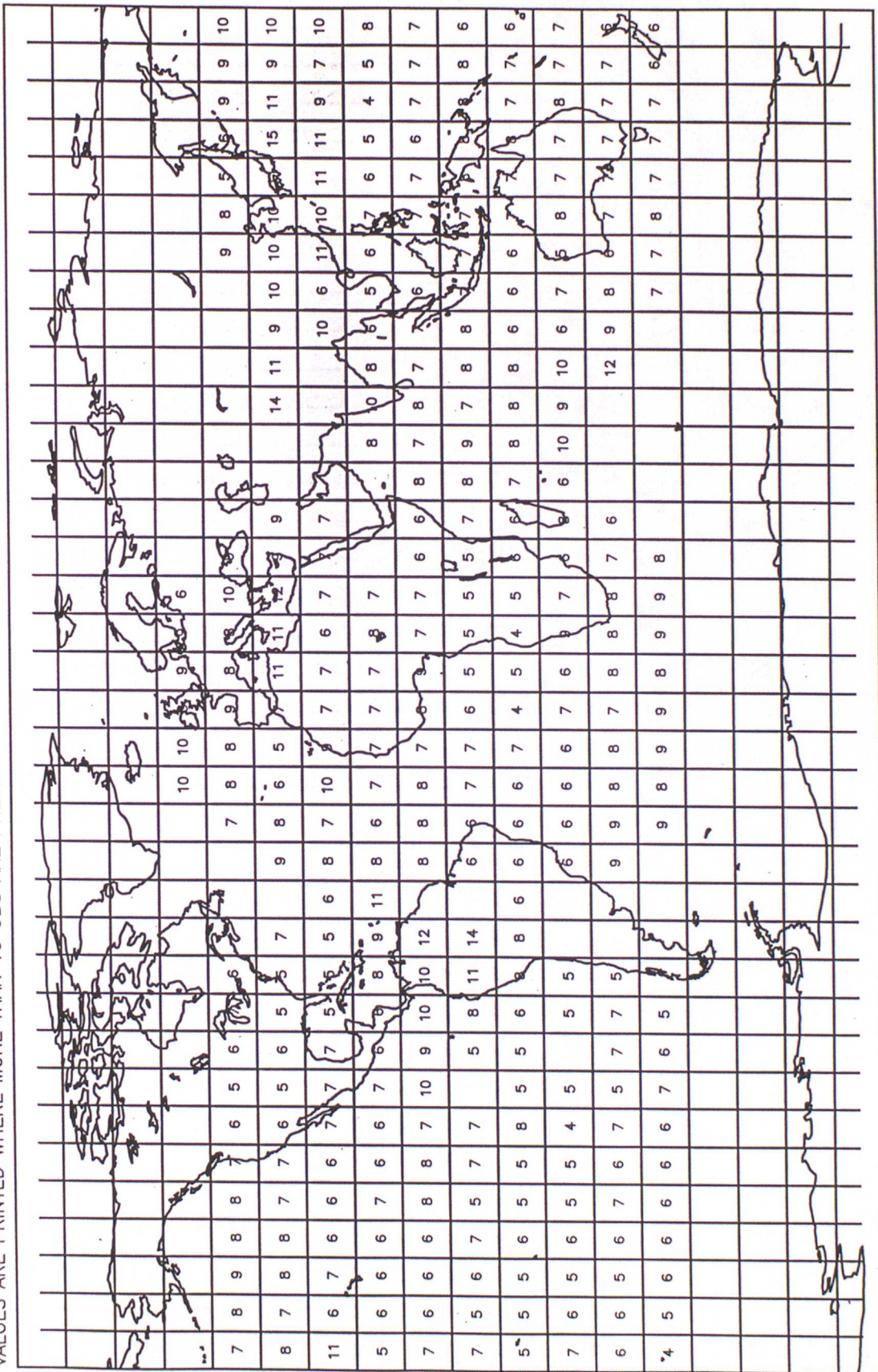
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT



SATOB5 : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA
JANUARY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



SATOB5 : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA
JANUARY 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT



MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: BRACKNELL

MONTH: January, 95

Monitoring procedures

Period : One calendar month.

Data monitored : Reports from NOAA-11, NOAA-12 500 km.

Standard of comparison : Background field from Bracknell global model.

Selection Criteria : All SATEM soundings where number of observations > 30.

Data Extracted : Layer: 850 - 1000 hPa
 100 - 300 hPa
 30 - 50 hPa

: Mean observation minus background temperature differences

NOAA-11, USING ALL OBSERVATIONS

500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
 JANUARY 1995

NOAA-11, USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

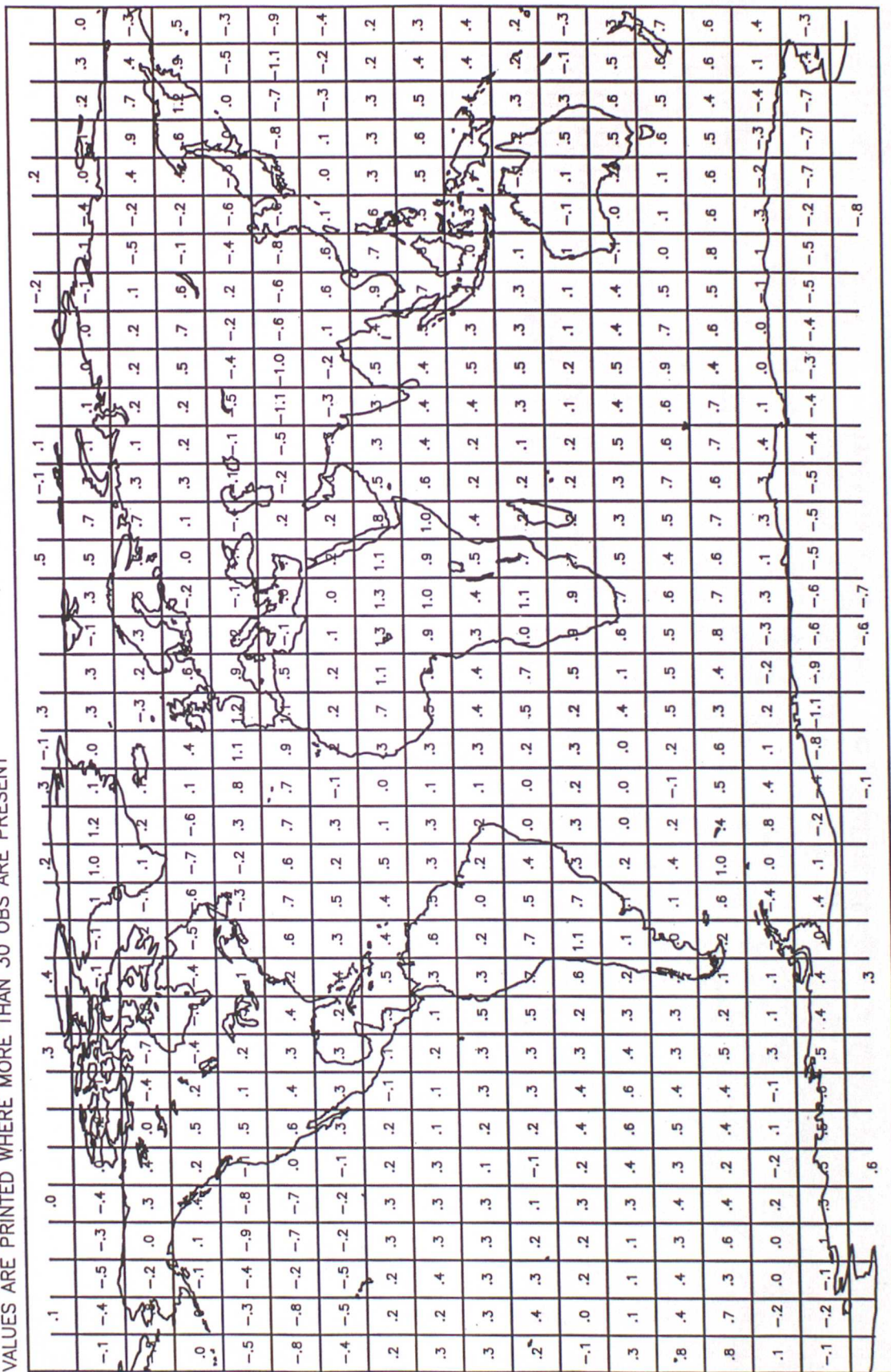
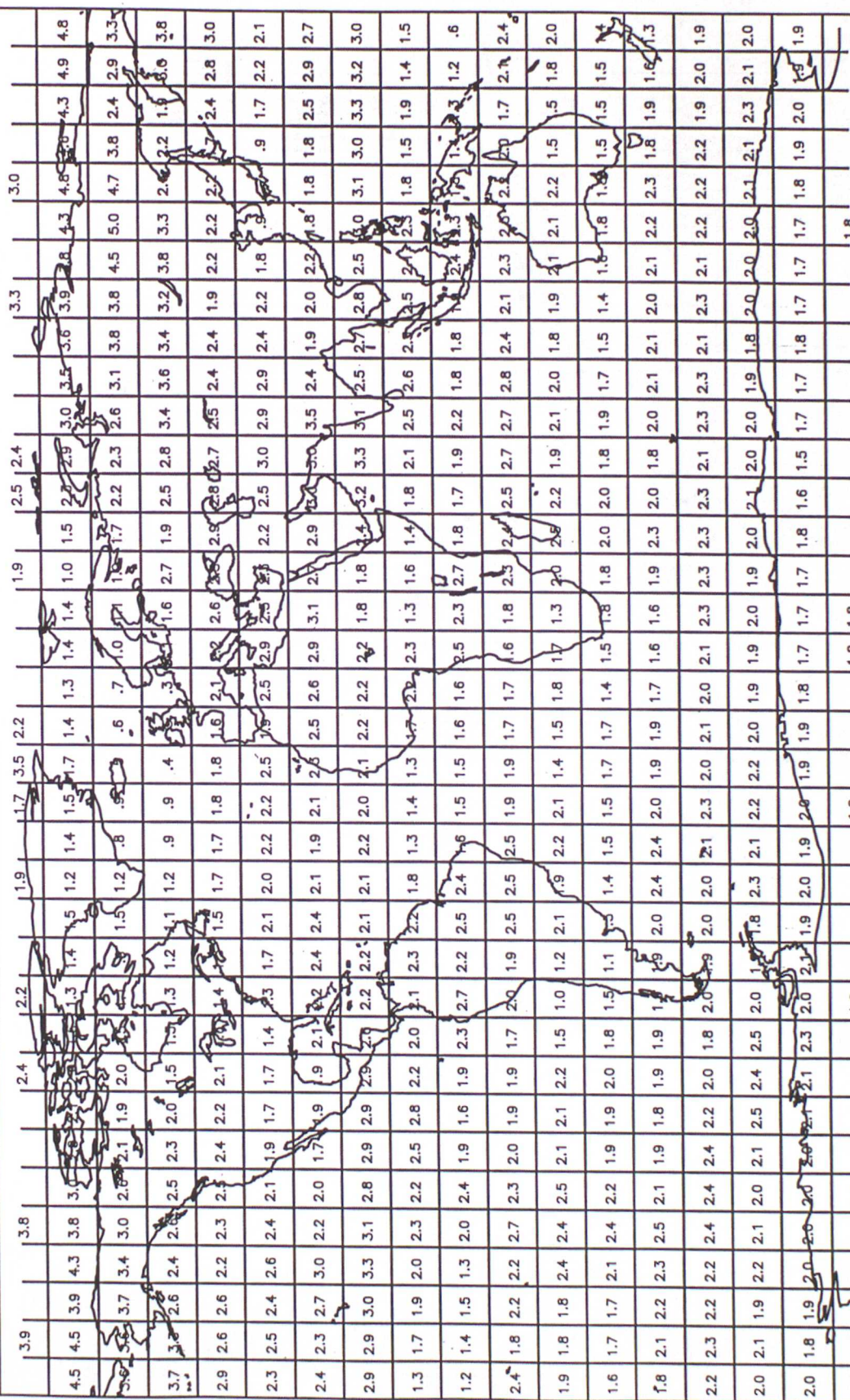
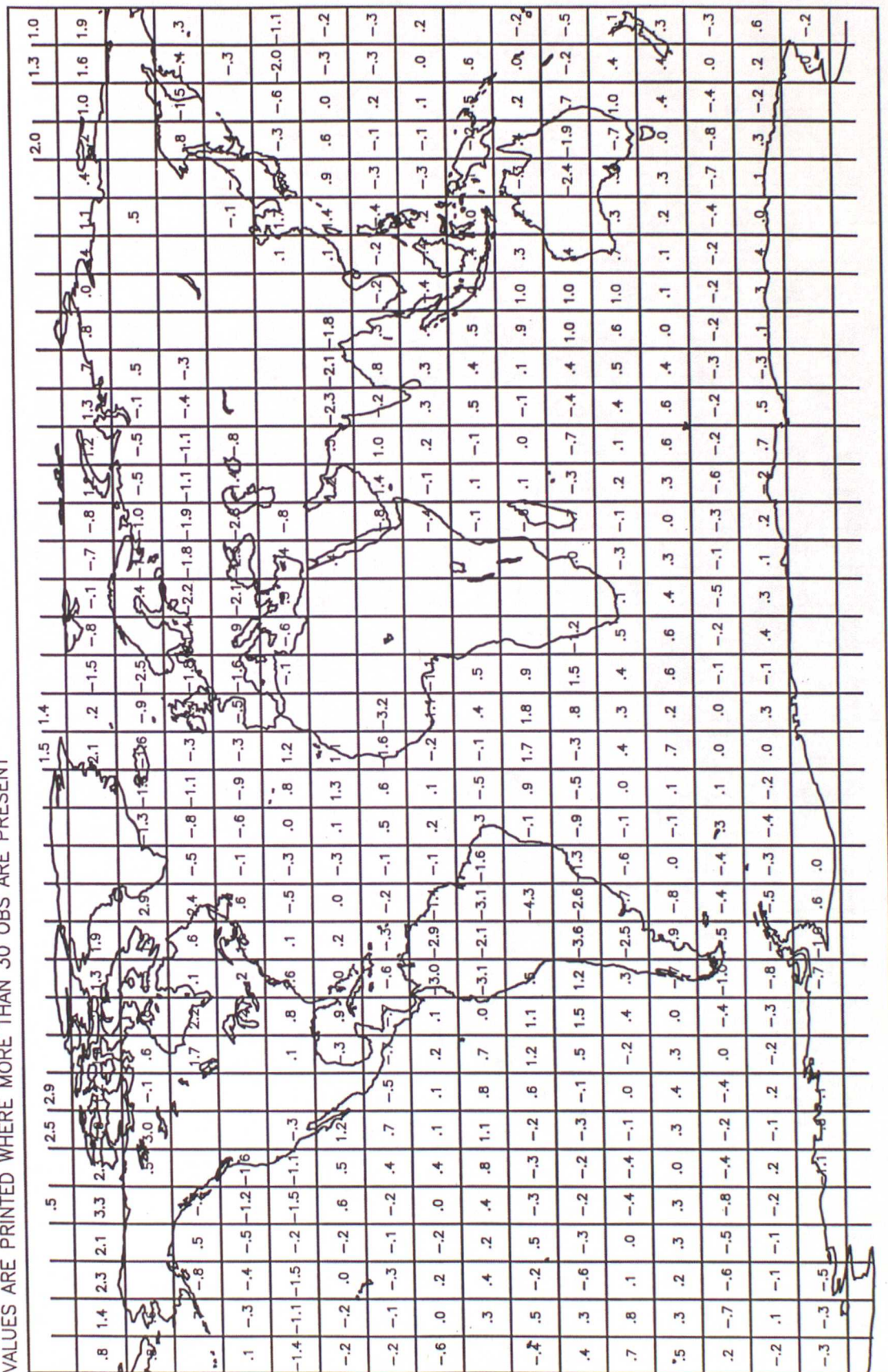


FIGURE 27

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



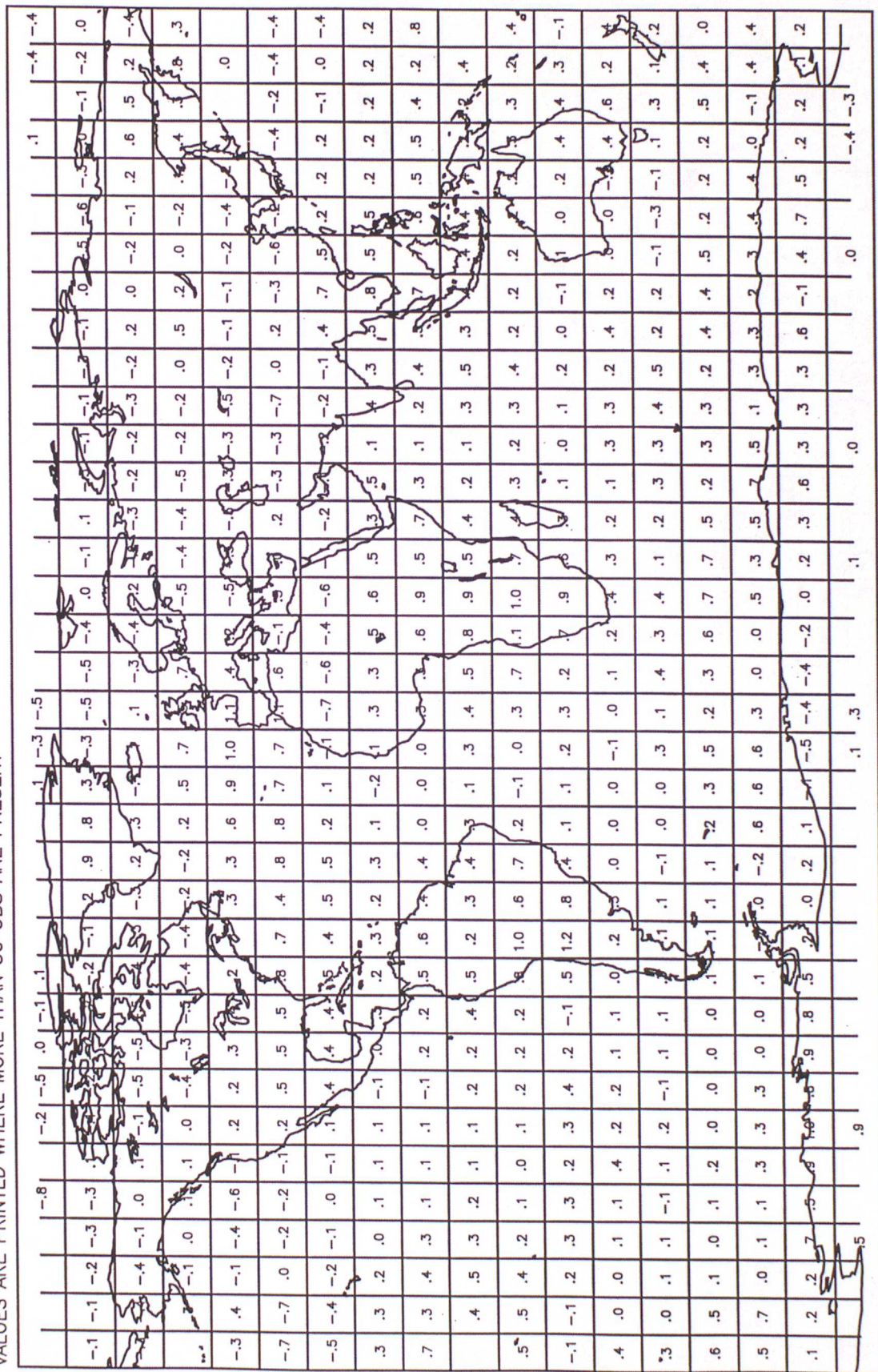
500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
 JANUARY 1995
 NOAA-12, USING ALL OBSERVATIONS
 VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
 JANUARY 1995

NOAA-12, USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



NOAA-12. USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

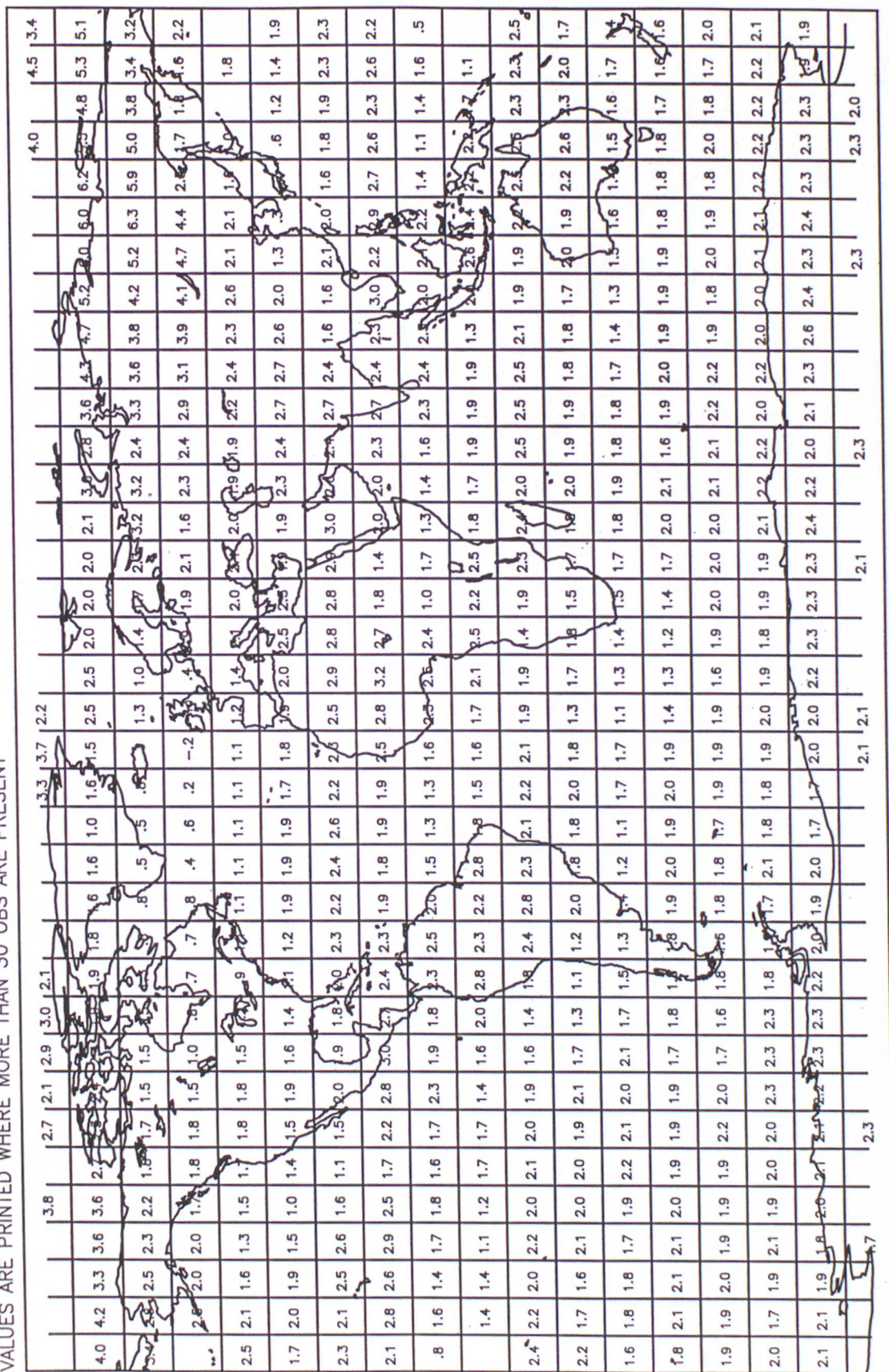


TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)

DATA TYPE:- DRIFTER

MONITORING CENTRE: BRACKNELL

MONTH: January, 95

Monitoring procedures	
Period	:One calendar month.
Data monitored	:Reports from each unique identifier for drifting buoy.
Area monitored	:10°N - 80°N, 85°W - 0°W
Standard of comparison	:Background field from Bracknell global model.
Position	:Average latitude and longitude for period.
Observation times	:All hours combined.
Elements monitored	:Mean sea-level pressure (hPa) :Wind speed (m s^{-1}) :Wind direction (degrees)
Parameters monitored	:NOBS :Number of observations received excluding duplicates. :NGE :Number of observations with gross errors. :PGE :Percentage of observations with gross errors. :SD :SD of difference of observations from background values excluding those with gross errors. :BIAS :Mean difference of observations from background values excluding those with gross errors. N.B. A positive bias indicates the observation is veered to the background :RMS :Root Mean Square difference of observations from background values excluding those with gross errors
GROSS ERROR LIMITS	:15 hPa (pressure) :25 m s^{-1} (Vector Wind)

N.B. Observations of wind direction are only included in the wind direction statistics if the wind speed > 3 m s^{-1}

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
------------	------	-------	------	------	-------	------	-----	-----	----	------	-----

MEAN SEA LEVEL PRESSURE

40702	30.9	-20.1	ALL	MSLP	SUR	1	0	0	0.0	0.6	0.6
40706	33.8	-36.7	ALL	MSLP	SUR	1	0	0	0.0	-0.1	0.1
40710	22.0	-17.8	ALL	MSLP	SUR	1	0	0	0.0	4.9	4.9
40907	16.5	-18.1	ALL	MSLP	SUR	2	0	0	0.9	1.9	2.2
40908	24.6	-58.6	ALL	MSLP	SUR	1	0	0	0.0	2.5	2.5
41610	20.8	-18.1	ALL	MSLP	SUR	1	0	0	0.0	2.5	2.5
44614	51.5	-25.7	ALL	MSLP	SUR	855	0	0	1.9	-0.2	1.9
44617	52.7	-19.2	ALL	MSLP	SUR	889	4	0	1.9	-0.1	1.9
44624	51.6	-41.5	ALL	MSLP	SUR	795	3	0	2.5	-0.6	2.5
44726	53.7	-39.0	ALL	MSLP	SUR	464	1	0	1.5	-0.1	1.5
44762	53.3	-25.6	ALL	MSLP	SUR	880	1	0	2.2	-0.3	2.3
44764	59.6	-24.2	ALL	MSLP	SUR	1155	0	0	2.1	0.3	2.1
44766	51.2	-43.7	ALL	MSLP	SUR	526	18	3	2.4	-1.1	2.6
44767	61.8	-29.0	ALL	MSLP	SUR	552	2	0	2.1	0.4	2.1
44769	62.1	-8.7	ALL	MSLP	SUR	57	53	93	1.4	12.2	12.3
44770	57.7	-45.7	ALL	MSLP	SUR	6	4	67	0.0	6.0	6.0
44774	53.9	-10.0	ALL	MSLP	SUR	2	0	0	0.3	8.3	8.3
44775	54.7	-21.4	ALL	MSLP	SUR	988	2	0	2.0	0.0	2.0
44776	58.1	-21.7	ALL	MSLP	SUR	1120	1	0	1.9	0.2	2.0
44780	54.5	-28.7	ALL	MSLP	SUR	924	2	0	2.3	-0.1	2.3
62507	52.6	-4.1	ALL	MSLP	SUR	18	0	0	2.0	0.8	2.1
62509	49.6	-7.0	ALL	MSLP	SUR	241	0	0	1.6	0.5	1.6
62510	49.3	-12.4	ALL	MSLP	SUR	539	0	0	1.8	0.4	1.9
62511	44.7	-15.8	ALL	MSLP	SUR	530	1	0	1.3	0.7	1.5
62512	45.8	-12.1	ALL	MSLP	SUR	428	0	0	3.0	0.9	3.2
62513	48.4	-21.4	ALL	MSLP	SUR	250	20	8	5.7	2.6	6.3
62524	26.2	-37.8	ALL	MSLP	SUR	453	0	0	1.0	-0.2	1.0
64528	56.7	-27.1	ALL	MSLP	SUR	724	0	0	2.3	-0.1	2.3
64529	63.8	-29.3	ALL	MSLP	SUR	805	2	0	3.0	-1.2	3.2
64544	57.1	-41.4	ALL	MSLP	SUR	252	0	0	2.4	-0.2	2.4
64546	62.9	-32.9	ALL	MSLP	SUR	347	0	0	2.0	-2.0	2.9
64547	59.4	-31.2	ALL	MSLP	SUR	205	0	0	2.2	0.6	2.3
64560	60.8	-22.6	ALL	MSLP	SUR	937	4	0	2.0	-0.4	2.0
65571	56.2	-27.6	ALL	MSLP	SUR	857	2	0	2.2	-0.4	2.2
65592	58.9	-21.0	ALL	MSLP	SUR	841	6	1	2.6	2.1	3.3

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
------------	------	-------	------	------	-------	------	-----	-----	----	------	-----

WIND SPEED

40702	30.9	-20.1	ALL	SPEED	SUR	1	0	0	0.0	-1.8	1.8
40706	33.8	-36.7	ALL	SPEED	SUR	1	0	0	0.0	-3.9	3.9
40710	22.0	-17.8	ALL	SPEED	SUR	1	0	0	0.0	4.2	4.2
40907	16.5	-18.1	ALL	SPEED	SUR	2	0	0	1.6	3.9	4.2
40908	24.6	-58.6	ALL	SPEED	SUR	1	0	0	0.0	1.5	1.5
41610	20.8	-18.1	ALL	SPEED	SUR	1	0	0	0.0	4.7	4.7
44617	52.7	-19.2	ALL	SPEED	SUR	888	4	0	2.6	-1.8	3.2
44762	53.3	-25.6	ALL	SPEED	SUR	880	2	0	2.6	-1.8	3.1
44764	59.6	-24.2	ALL	SPEED	SUR	1150	1	0	2.9	-0.4	2.9
44776	58.1	-21.7	ALL	SPEED	SUR	1122	4	0	3.5	-1.2	3.7
62508	44.7	-8.8	ALL	SPEED	SUR	109	0	0	2.0	0.1	2.0
64544	57.1	-41.4	ALL	SPEED	SUR	244	1	0	3.7	-6.2	7.2

WIND DIRECTION

40702	30.9	-20.1	ALL	DIRN.	SUR	1	0	0	0.0	-8.5	8.5
40706	33.8	-36.7	ALL	DIRN.	SUR	1	0	0	0.0	32.4	32.4
40710	22.0	-17.8	ALL	DIRN.	SUR	1	0	0	0.0	19.0	19.0
40907	16.5	-18.1	ALL	DIRN.	SUR	2	0	0	14.1	4.3	14.8
41610	20.8	-18.1	ALL	DIRN.	SUR	1	0	0	0.0	-18.9	18.9
44617	52.7	-19.2	ALL	DIRN.	SUR	871	4	0	37.9	-1.3	38.0
44762	53.3	-25.6	ALL	DIRN.	SUR	834	2	0	24.6	2.7	24.8

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
------------	------	-------	------	------	-------	------	-----	-----	----	------	-----

WIND DIRECTION

44764	59.6	-24.2	ALL	DIRN.	SUR	1086	1	0	26.9	-4.5	27.3
44776	58.1	-21.7	ALL	DIRN.	SUR	1059	4	0	56.1	-2.6	56.1
62508	44.7	-8.8	ALL	DIRN.	SUR	88	0	0	49.0	-24.1	54.6
64544	57.1	-41.4	ALL	DIRN.	SUR	203	1	0	81.8	-21.1	84.5

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
 MONITORING CENTRE: BRACKNELL
 MONTH: January, 95

Monitoring procedures:		
Period		:One calendar month.
Data monitored		:Statistics for each airline carrier.
Area monitored		:40°N - 70°N, 60°W - 0°W.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:All hours combined.
Level(s) monitored		:300.0 - 150.0 hPa
Elements monitored		:TEMP in °C ; WIND in m s ⁻¹
Parameters monitored	:N REP.	:Number of observations received excluding duplicates.
	:PG	:Percentage of observations with gross errors.
	:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
	:PC	:Percentage of observations with calm winds.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.
GROSS ERROR LIMITS		:10.0 °C ; 60 m s ⁻¹ Vector Wind
SELECTION CRITERIA		:N REP ≥ 20

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				BIAS
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	
AAL	1945	0	2	2.0	-0.2	1957	0	2	0	8.2	1.2
AAN	45	0	7	3.0	-0.6	43	0	14	0	11.8	0.6
ACA	717	0	1	1.9	0.0	729	0	1	0	6.7	0.5
AEA	71	23	100	3.8	0.2	68	0	4	0	8.8	-0.1
AEL	302	0	2	2.1	-0.4	314	0	3	0	9.0	0.6
AFL	46	4	100	4.7	3.0	47	2	100	0	15.9	0.4
AFR	775	1	7	2.1	-0.3	787	0	6	0	8.4	0.5
AIC	36	3	8	2.1	-0.3	37	0	8	0	14.3	2.1
AMX	154	1	36	1.8	-0.1	159	0	4	0	9.5	-0.2
ANZ	142	0	4	2.0	-1.0	145	0	4	1	8.2	0.3
AOM	245	1	4	2.1	0.3	250	0	100	0	9.5	0.9
AUA	64	0	0	2.0	-0.4	64	0	2	0	9.9	-0.1
AVA	89	2	6	2.4	-0.7	95	0	3	0	9.9	1.0
AZA	341	0	2	2.1	0.5	348	0	1	0	7.5	1.3
BAL	95	1	21	1.8	-0.4	97	0	21	0	10.4	1.2
BAW	1174	1	5	2.3	-0.1	1186	0	5	0	8.6	1.6
BBB	29	0	21	1.5	-0.7	29	0	21	0	5.9	0.4
BWA	115	0	3	1.9	0.8	117	0	43	0	9.7	0.0
CDN	538	0	4	1.8	0.3	542	0	4	1	6.8	1.0
CFG	433	0	2	2.3	-1.2	449	0	2	0	8.9	0.6
CKT	45	2	11	1.5	0.3	46	2	15	0	10.5	1.0
CLI	25	0	0	1.8	-0.3	26	0	0	0	9.5	1.5
CLX	56	0	0	1.9	-0.9	57	0	0	0	6.6	1.4
CMM	22	0	36	0.9	-0.4	22	0	36	0	8.4	3.0
COA	320	1	3	2.3	0.4	318	0	3	1	9.2	1.1
CRL	119	0	2	2.0	0.1	122	0	2	1	10.4	1.7
CSA	26	0	4	1.4	-0.6	26	0	8	0	9.3	2.4
CTM	36	0	11	2.3	-1.5	39	0	13	0	8.1	0.8
CUB	94	1	6	2.7	0.6	93	0	45	0	12.0	0.7
DAF	26	0	0	2.4	0.7	26	0	0	0	6.4	-0.2
DAL	1928	1	2	2.1	0.3	1933	0	2	0	8.5	0.9
DHL	357	2	100	4.0	-2.4	358	1	100	1	9.0	1.2
DLH	1704	0	7	2.2	0.2	1710	0	10	2	8.1	1.1
DOA	114	1	39	2.1	-0.5	114	0	23	0	8.1	-0.2
EIN	22	0	9	2.4	-1.0	25	0	24	0	15.3	1.6
ELY	109	2	9	2.2	-0.3	112	0	38	0	10.1	0.0
FDX	377	0	5	2.2	0.7	382	0	4	0	8.8	1.8
FIN	370	1	4	1.9	0.3	364	1	6	2	8.5	0.6
GAF	65	0	0	1.7	-0.2	65	0	0	0	6.5	0.6
GFA	45	2	4	1.4	-0.2	46	0	2	0	7.8	0.7
HLF	68	1	3	2.5	-0.8	71	0	1	0	8.7	-1.1
IBE	839	1	16	2.0	0.1	843	0	46	0	10.0	0.7
ICE	457	0	1	1.6	0.2	454	0	2	1	6.6	0.5
KLM	1490	0	1	1.9	0.0	1511	0	2	0	8.5	0.9
LDA	90	2	9	1.6	-1.1	93	0	9	0	9.0	0.4
LDI	184	0	2	2.7	-2.1	184	0	1	0	10.3	0.4
LIB	134	1	3	1.9	0.5	135	0	3	1	9.8	0.3
LOT	387	0	2	1.8	-0.3	392	1	2	0	6.8	0.4
LTU	533	0	2	1.9	0.1	526	0	4	0	9.9	1.3
MKD	44	0	0	2.3	-0.2	44	0	0	0	7.6	0.1
MPH	471	0	3	2.2	-0.9	471	0	2	0	9.1	0.7
NWA	1826	1	3	2.1	1.0	1849	0	3	1	8.3	0.7
OAL	23	0	0	1.5	0.5	25	0	0	0	9.3	4.0
RJA	50	0	2	2.5	1.1	50	0	2	0	8.7	0.2
RRR	94	1	13	2.3	0.1	95	0	32	0	10.2	1.3
SAB	57	0	0	1.3	0.1	57	0	0	0	7.4	2.6
SAS	1074	1	1	1.9	-0.2	1074	0	1	0	7.9	0.6
SIA	87	0	10	2.1	-1.1	89	0	42	0	12.5	2.1
SPP	73	0	14	2.2	-0.8	74	0	16	0	9.7	0.4

IDENT.	N.REP.	TEMPERATURE				N.REP.	WIND				
		PG	PR	RMS	BIAS		PG	PR	PC	RMS	BIAS
SVA	100	1	5	1.7	-0.3	107	1	6	0	10.1	2.1
SWR	145	1	6	1.8	0.4	149	0	7	0	10.0	1.9
TAP	192	1	9	2.1	-0.1	192	0	9	1	9.3	0.9
TEJ	54	0	11	2.3	0.5	56	0	9	0	10.4	1.6
TIH	69	0	1	1.6	0.1	70	0	1	0	8.9	0.8
TOW	73	0	3	2.6	0.0	75	0	37	0	8.8	1.6
TWA	618	0	2	2.0	-0.2	624	0	3	0	8.7	1.2
UAL	1498	2	7	2.2	-0.4	1522	0	7	5	9.3	0.0
ULE	44	0	0	1.9	-0.7	45	0	0	0	8.1	0.7
UPS	313	0	16	2.2	0.0	320	0	17	0	9.4	1.5
USA	89	0	8	1.6	-0.3	90	0	10	0	9.8	1.9
VIA	107	1	4	2.2	0.8	108	0	5	0	10.2	1.3
VIR	142	0	3	1.8	-0.3	146	1	39	0	8.9	3.5
BA	7824	0	17	1.8	0.6	7821	0	16	0	7.6	1.1
KL	2350	0	71	3.1	2.7	2350	0	18	0	7.3	1.0
LH	92	0	28	1.9	0.0	92	0	68	0	5.5	0.8
M	81	5	100	3.2	0.9	90	0	100	0	14.3	0.9
N	159	0	6	3.0	1.2	163	0	4	0	10.5	-0.2

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
 MONITORING CENTRE: BRACKNELL
 MONTH: January, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBBH	00	Z	100	2	0	0.5	26.5	26.5
DBBH	12	Z	100	16	1	22.7	42.1	35.4
DBLK	00	Z	100	1	0	0.0	7.0	7.0
EHOA	00	Z	100	1	0	0.0	151.0	-151.0
EHOA	12	Z	100	1	0	0.0	52.0	52.0
FNOR	00	Z	100	2	0	1.5	14.6	14.5
FNOR	12	Z	100	1	0	0.0	14.0	14.0
FNOU	00	Z	100	4	0	15.8	18.0	8.8
FNOU	12	Z	100	3	0	17.2	28.4	-22.7
FNPB	00	Z	100	18	0	19.5	21.2	8.4
FNPB	12	Z	100	11	0	17.1	17.2	0.4
FNRS	00	Z	100	11	0	27.3	27.3	1.9
FNRS	12	Z	100	11	0	24.0	25.2	-7.7
GACA	00	Z	100	29	0	20.9	21.1	-3.4
GACA	12	Z	100	30	0	19.9	20.4	4.4
JBOA	00	Z	100	1	0	0.0	24.0	-24.0
JCCX	00	Z	100	1	0	0.0	46.0	46.0
LDWR	00	Z	100	28	0	15.3	16.3	5.6
LDWR	12	Z	100	28	0	24.4	25.2	6.4
OXYL	00	Z	100	9	0	13.9	18.6	12.3
OXYL	12	Z	100	10	0	15.5	22.2	15.9
OZJP	00	Z	100	10	0	76.5	89.5	-46.5
OZJP	12	Z	100	5	0	16.3	37.5	-33.8
SHIP	00	Z	100	1	0	0.0	21.0	21.0
SHIP	12	Z	100	1	0	0.0	46.0	46.0
SHIPS	00	Z	100	8	0	15.9	41.3	38.1
SHIPS	12	Z	100	6	0	20.7	53.7	49.5
UQYC	00	Z	100	1	0	0.0	13.0	13.0
V0LV	00	Z	100	1	0	0.0	25.0	-25.0
V2LV	00	Z	100	22	0	45.6	45.7	2.6
V2LV	12	Z	100	22	0	23.0	24.7	9.0
V2LX	00	Z	100	8	0	47.1	51.3	20.5
V2LX	12	Z	100	9	0	21.6	45.0	39.4
ZDLG	00	Z	100	1	0	0.0	43.0	43.0
03953	00	Z	100	28	0	20.1	20.1	-1.3
03953	12	Z	100	28	0	22.8	25.3	11.0
04018	00	Z	100	29	0	19.1	22.4	11.6
04018	12	Z	100	30	0	24.2	31.6	20.3
04220	00	Z	100	30	0	17.6	21.1	11.6
04220	12	Z	100	30	0	15.0	17.7	9.5
04270	00	Z	100	29	0	20.9	24.1	11.9
04270	12	Z	100	30	0	27.7	27.7	1.2
04339	00	Z	100	28	0	19.5	19.5	0.4
04339	12	Z	100	28	0	13.0	13.0	1.3
04360	00	Z	100	27	0	17.3	19.5	9.0
04360	12	Z	100	30	0	15.9	17.0	6.0
08001	00	Z	100	18	0	24.0	28.8	15.9
08001	12	Z	100	28	0	19.9	25.6	16.1
08508	00	Z	100	27	0	22.2	34.0	25.8
08508	12	Z	100	29	0	23.9	31.1	20.0
08594	00	Z	100	26	0	17.3	22.6	-14.5
08594	12	Z	100	31	0	19.5	23.3	-12.7
60020	00	Z	100	29	0	20.2	26.6	17.3
60020	12	Z	100	28	0	21.5	33.9	26.2
71600	00	Z	100	29	0	19.7	25.4	16.1
71600	12	Z	100	29	0	18.4	18.8	3.6
72201	00	Z	100	27	0	31.4	36.3	18.1
72201	12	Z	100	31	0	24.2	26.9	11.6
72402	00	Z	100	25	0	22.7	42.7	36.2
72402	12	Z	100	28	0	29.5	35.4	19.6

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
74494	00	Z	100	28	0	21.3	27.1	-16.7
74494	12	Z	100	31	0	38.9	39.5	-6.8

TABLE 11

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
 MONITORING CENTRE: BRACKNELL
 MONTH: January, 95

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBBH	00	Z	500	2	0	5.0	25.5	25.0
DBBH	12	Z	500	16	1	12.0	19.3	15.1
DBLK	00	Z	500	1	0	0.0	21.0	21.0
EHOA	00	Z	500	1	0	0.0	16.0	16.0
EHOA	12	Z	500	1	0	0.0	8.0	8.0
FNOR	00	Z	500	2	0	5.5	6.0	2.5
FNOR	12	Z	500	3	0	15.2	15.4	2.3
FNOU	00	Z	500	4	0	3.3	5.4	4.3
FNOU	12	Z	500	3	0	11.5	14.0	-8.0
FNPB	00	Z	500	19	0	9.7	10.1	-2.8
FNPB	12	Z	500	11	0	11.7	12.1	-3.0
FNRS	00	Z	500	12	0	11.2	12.3	-4.9
FNRS	12	Z	500	11	0	13.6	15.0	-6.5
GACA	00	Z	500	29	0	10.8	11.3	-3.1
GACA	12	Z	500	30	0	16.7	16.7	1.0
JBOA	00	Z	500	1	0	0.0	5.0	5.0
JCCX	00	Z	500	1	0	0.0	23.0	23.0
LDWR	00	Z	500	30	0	13.0	13.3	2.6
LDWR	12	Z	500	29	0	19.7	19.7	1.7
OXYL	00	Z	500	9	0	10.4	10.5	-1.4
OXYL	12	Z	500	10	0	17.6	17.9	3.2
OZJP	00	Z	500	10	0	22.3	22.3	0.3
OZJP	12	Z	500	5	0	15.1	15.7	-4.6
SHIP	00	Z	500	2	0	2.0	4.5	4.0
SHIP	12	Z	500	1	0	0.0	10.0	10.0
SHIPS	00	Z	500	14	0	15.2	23.4	17.7
SHIPS	12	Z	500	17	0	10.6	21.1	18.2
UQYC	00	Z	500	1	0	0.0	13.0	-13.0
V0LV	00	Z	500	1	0	0.0	20.0	-20.0
V2LV	00	Z	500	25	0	29.1	29.1	-0.2
V2LV	12	Z	500	25	0	11.8	14.4	-8.3
V2LX	00	Z	500	8	0	6.5	7.8	-4.3
V2LX	12	Z	500	9	0	10.0	11.5	5.7
ZDLG	00	Z	500	1	0	0.0	22.0	22.0
03953	00	Z	500	30	0	11.8	12.3	3.6
03953	12	Z	500	31	0	19.7	21.0	7.1
04018	00	Z	500	30	0	14.0	14.6	4.0
04018	12	Z	500	31	0	11.4	16.3	11.6
04220	00	Z	500	30	0	19.5	20.2	5.3
04220	12	Z	500	31	0	19.8	20.1	3.5
04270	00	Z	500	30	0	20.7	23.7	-11.6
04270	12	Z	500	31	0	17.3	19.3	-8.6
04339	00	Z	500	28	0	23.4	24.0	5.0
04339	12	Z	500	28	0	16.5	16.8	3.6
04360	00	Z	500	28	0	16.2	17.7	-7.2
04360	12	Z	500	30	0	17.8	19.4	-7.6
08001	00	Z	500	23	0	14.8	14.8	-0.9
08001	12	Z	500	28	0	15.4	15.5	-1.4
08508	00	Z	500	30	0	12.2	12.8	3.8
08508	12	Z	500	30	0	14.6	14.6	-0.1
08594	00	Z	500	26	0	13.0	13.5	-3.6
08594	12	Z	500	30	0	14.9	16.1	-6.0
60020	00	Z	500	29	0	8.8	13.4	10.2
60020	12	Z	500	28	0	9.9	17.4	14.3
71600	00	Z	500	28	0	15.3	15.3	0.5
71600	12	Z	500	28	0	13.0	13.1	-1.7
72201	00	Z	500	29	0	9.3	11.7	7.0
72201	12	Z	500	31	0	10.6	11.5	4.4
72402	00	Z	500	29	0	10.8	12.8	6.9
72402	12	Z	500	30	0	16.4	17.5	6.2

WMO	OBS			NUM	NUM			
IDENT	TIME	ELM	LEV	OBS	GROSS	SD	RMS	BIAS
74494	00	Z	500	29	0	11.0	12.5	-5.9
74494	12	Z	500	31	0	28.4	29.9	9.3

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
 MONITORING CENTRE: BRACKNELL
 MONTH: January, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:VECTOR WIND in m s ⁻¹
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBBH	00	V	100	2	0	0	0.0	2.4	-1.6
DBBH	12	V	100	15	0	0	0.0	-0.1	1.0
DBLK	00	V	100	1	0	0	3.4	2.9	0.8
EHOA	00	V	100	1	0	0	4.1	-12.9	-0.5
EHOA	12	V	100	1	0	0	4.1	-9.8	-0.8
FNOR	00	V	100	2	0	0	4.1	-0.8	-1.5
FNOR	12	V	100	1	0	0	4.1	-5.9	-3.6
FNOU	00	V	100	4	0	0	4.1	0.6	-1.7
FNOU	12	V	100	3	0	0	4.1	-4.3	0.2
FNPB	00	V	100	18	0	0	4.1	-0.2	-1.6
FNPB	12	V	100	12	0	8	4.6	-5.4	4.6
FNRS	00	V	100	10	0	0	8.9	-0.7	-0.4
FNRS	12	V	100	11	0	0	5.5	-2.3	-1.1
GACA	00	V	100	28	0	0	4.1	-0.7	0.5
GACA	12	V	100	30	0	0	3.9	-1.2	-0.2
JBOA	00	V	100	1	0	0	3.7	1.9	2.4
JCCX	00	V	100	1	0	0	3.7	-4.4	0.4
LDWR	00	V	100	26	0	7	3.7	1.7	-1.1
LDWR	12	V	100	25	0	0	8.8	-1.3	-2.0
OXYL	00	V	100	9	0	0	3.9	1.3	0.4
OXYL	12	V	100	10	0	0	3.9	0.7	0.6
OZJP	00	V	100	10	0	0	1.4	-1.3	-1.0
OZJP	12	V	100	5	0	0	5.3	-3.8	0.6
SHIP	00	V	100	1	0	0	5.3	-1.2	3.9
SHIP	12	V	100	1	0	100	5.3	5.4	-12.9
SHIPS	00	V	100	7	0	0	5.3	0.6	1.8
SHIPS	12	V	100	6	0	0	5.3	2.2	2.8
UQYC	00	V	100	1	0	0	5.3	2.3	0.9
V0LV	00	V	100	1	0	0	5.3	-2.1	-0.7
V2LV	00	V	100	20	0	0	5.3	1.2	-2.1
V2LV	12	V	100	22	0	0	4.5	-1.2	-1.7
V2LX	00	V	100	8	0	0	4.7	3.7	-1.8
V2LX	12	V	100	9	0	0	4.7	-2.9	-1.2
ZDLG	00	V	100	1	0	0	4.7	0.5	-0.8
03953	00	V	100	23	0	0	3.6	-0.8	-0.6
03953	12	V	100	27	0	0	3.4	-1.2	0.0
04018	00	V	100	26	0	0	3.3	-0.8	0.6
04018	12	V	100	26	0	0	3.4	-0.7	-1.6
04220	00	V	100	29	0	0	2.5	0.2	1.0
04220	12	V	100	29	0	0	2.2	0.1	0.5
04270	00	V	100	29	0	0	2.0	0.6	-0.4
04270	12	V	100	30	0	0	2.9	0.1	1.0
04339	00	V	100	27	0	0	2.3	1.2	0.4
04339	12	V	100	26	0	0	2.9	-0.1	-0.6
04360	00	V	100	27	0	0	2.2	0.1	-0.1
04360	12	V	100	29	0	0	2.4	-0.7	-0.1
08001	00	V	100	14	0	0	4.0	0.1	0.9
08001	12	V	100	26	0	0	3.7	-1.3	0.0
08508	00	V	100	27	0	0	3.4	0.7	-0.8
08508	12	V	100	29	0	0	4.7	-2.0	-0.9
60020	00	V	100	28	0	0	6.1	1.1	0.6
60020	12	V	100	28	0	0	4.2	-2.1	2.0
71600	00	V	100	24	0	0	2.7	1.8	0.5
71600	12	V	100	28	0	0	4.4	0.7	0.6
72201	00	V	100	25	0	0	1.9	-0.4	0.8
72201	12	V	100	30	0	0	4.2	-1.5	0.6
72402	00	V	100	21	0	0	3.9	1.3	-0.3
72402	12	V	100	23	0	0	3.5	-0.7	-1.0
74494	00	V	100	25	0	0	3.8	-0.2	0.3
74494	12	V	100	20	0	0	3.0	0.4	0.9

TABLE 13

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
 MONITORING CENTRE: BRACKNELL
 MONTH: January, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:VECTOR WIND in m s ⁻¹
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS		:Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBBH	00	V	500	2	0	0	0.0	0.6	-2.3
DBBH	12	V	500	16	0	0	0.0	-0.6	-1.1
EHOA	00	V	500	1	0	0	4.6	1.8	-1.9
EHOA	12	V	500	1	0	0	4.6	-6.7	-0.3
FNOR	00	V	500	2	0	0	4.6	4.8	-2.3
FNOR	12	V	500	2	0	0	4.6	3.7	2.7
FNOU	00	V	500	4	0	0	4.6	2.1	0.0
FNOU	12	V	500	3	0	0	4.6	3.3	-0.2
FNPB	00	V	500	18	0	0	4.6	0.2	0.3
FNPB	12	V	500	11	0	9	4.0	-1.4	2.4
FNRS	00	V	500	12	0	8	3.1	-0.9	-0.2
FNRS	12	V	500	11	0	0	8.6	-0.7	-0.2
GACA	00	V	500	29	0	0	3.5	0.9	-0.3
GACA	12	V	500	30	0	0	4.5	0.0	0.5
JBOA	00	V	500	1	0	0	3.9	0.7	1.9
JCCX	00	V	500	1	0	0	3.9	-0.5	0.2
LDWR	00	V	500	29	0	3	3.9	1.2	-1.1
LDWR	12	V	500	24	0	0	6.9	-0.1	0.7
OXYL	00	V	500	9	0	0	5.7	0.1	-0.4
OXYL	12	V	500	10	0	0	5.7	0.1	-1.5
OZJP	00	V	500	10	0	0	3.2	1.7	-0.4
OZJP	12	V	500	5	0	0	5.3	-0.1	1.9
SHIP	00	V	500	2	0	0	5.3	1.2	-0.6
SHIP	12	V	500	1	0	0	5.3	5.9	2.2
SHIPS	00	V	500	14	0	0	5.3	0.9	1.6
SHIPS	12	V	500	17	0	0	4.2	-1.4	-0.3
UQYC	00	V	500	1	0	0	4.7	4.6	-0.6
V0LV	00	V	500	1	0	0	4.7	3.9	-3.7
V2LV	00	V	500	24	0	0	4.7	-0.2	0.8
V2LV	12	V	500	24	0	0	3.9	-1.2	1.7
V2LX	00	V	500	8	0	12	4.3	-0.7	2.8
V2LX	12	V	500	9	0	0	4.3	0.3	1.1
ZDLG	00	V	500	1	0	0	4.3	3.3	0.0
03953	00	V	500	30	0	0	5.3	0.0	0.6
03953	12	V	500	31	0	0	5.5	-1.3	0.3
04018	00	V	500	30	0	0	3.8	1.0	0.2
04018	12	V	500	31	0	0	4.5	-1.3	-0.6
04220	00	V	500	30	0	0	3.5	-1.1	1.9
04220	12	V	500	31	0	0	4.1	-0.7	0.2
04270	00	V	500	30	0	0	5.0	-0.8	0.3
04270	12	V	500	31	0	0	6.1	0.6	-0.6
04339	00	V	500	28	0	0	4.3	-0.8	-0.6
04339	12	V	500	28	0	0	3.1	-1.4	1.2
04360	00	V	500	28	0	0	4.2	-0.4	1.0
04360	12	V	500	30	0	0	3.6	-0.7	0.9
08001	00	V	500	22	0	0	4.2	3.1	1.6
08001	12	V	500	28	0	0	5.0	0.7	0.5
08508	00	V	500	30	0	0	3.7	1.7	0.9
08508	12	V	500	30	0	0	3.9	0.4	1.5
60020	00	V	500	29	0	0	4.0	0.4	-0.9
60020	12	V	500	28	0	0	2.8	-0.3	-0.8
71600	00	V	500	27	0	0	3.1	-0.6	0.1
71600	12	V	500	28	0	0	4.0	1.2	0.4
72201	00	V	500	29	0	0	3.8	0.6	2.1
72201	12	V	500	31	0	0	3.6	0.5	1.7
72402	00	V	500	27	0	0	5.5	0.6	-1.3
72402	12	V	500	28	0	0	3.3	0.1	1.3
74494	00	V	500	29	0	0	2.6	-1.1	0.6
74494	12	V	500	31	0	0	2.9	0.5	0.9

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5,10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s ⁻¹
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45